



SEECS
SCHOOL OF ELECTRICAL
ENGINEERING &
COMPUTER SCIENCE, NUST

SEECS

SEECS
GRADUATE BOOKLET
**BSCS - BACHELOR OF
COMPUTER SCIENCE**
CLASS OF
2026



INTRODUCTION TO SEECS

NUST-SEECS stands as a center of excellence, dedicated to advancing research and innovation in the fields of computing and electrical engineering. Our institution fosters a dynamic learning environment where students are encouraged to bridge the gap between academic theory and practical industry application. We take immense pride in our faculty and students, whose unwavering commitment ensures a spirit of distinction in every project and endeavor. By integrating professional ethics with technical mastery, we prepare our graduates to lead with integrity in the global technological landscape.

SEECS programs are globally recognized in the QS World University Rankings by Subject - **Computer Science ranks 114th globally, making it the #1 Computer Science program in Pakistan**, while **Electrical Engineering ranks 131st** and **Software Engineering ranks 132nd worldwide. Computer Science** also holds the distinction of being the **top merit program across all NUST programs**, reflecting the exceptional caliber of students it attracts.

The school remains at the forefront of national progress, cultivating the next generation of strategic thinkers and visionary engineers. Our graduates are equipped with a unique blend of technical expertise and leadership skills, making them highly sought after in the professional sector. By fostering a culture of continuous improvement and self-empowerment, SEECS continues to define the standard for engineering education in the region.



Greeting & Message from
Principal NUST-SEECs
Dr. Muhammad Ajmal Khan, SI(M)
PhD (Michigan State University, USA)

It is a pleasure to introduce to you the graduating classes of 2026 in the disciplines of Electrical Engineering, Software Engineering, and Computer Science. NUST-School of Electrical Engineering and Computer Science (SEECs) is committed to providing first-rate higher education in Pakistan. We emphasize making SEECs a center of excellence for imparting high-quality education in the areas of Electrical Engineering and Computer Science that would lead to the promotion of research and scholarly achievements at National & International levels. We foster a passion for creativity and productivity in our students through an enabling environment of state-of-the-art labs, arranging industry visits, seminars, and international conferences, etc. Besides imparting thorough professional knowledge, we also believe in instilling sound entrepreneurial, social and humanitarian values. The programs offered at SEECs include Electronics, Digital Systems, RF and Microwave, Telecommunication and Networks, Artificial Intelligence, Machine Learning, Big Data, Cyber Security, and Cloud Computing. Hands-on training in these domains augments the basic knowledge of our students, giving insights into its practical application, an essential prerequisite for potential technical leaders of the 21st century. The projects showcased in the Open House demonstrate the skill set of our graduating students, and the highly interactive sessions with the industrial professionals provide them a platform for networking. Another aim of holding this event is to address the dire need for industry-academia partnerships in Pakistan. Through Open House, the industry can witness the outstanding research of various disciplines that are being offered at NUST-SEECs. At the same time, the industry feedback helps us update our curriculum according to the contemporary market trends. Henceforth, I take immense delight in presenting the batch of 2026 as the proud product of SEECs and wish them success as they go forward in their respective fields, with all the best for their journey ahead.

OVERVIEW OF

OPEN HOUSE



NUST SEecs organizes its annual open house to showcase the skills of its graduating students. The idea is to provide a platform where our students and industry representatives can mingle and have informal or formal discussions. The students showcase their final year projects which represent their skill set and enable potential employers to identify any matching requirements. The projects are presented by students from two main departments:

Computer Science (CS) | Software Engineering (SE)

This year Faculty of Computing has divided the projects into different knowledge areas, including Algorithms and Complexity, Architecture and Organization, Computational Science, Graphics and Visualization, Human-Computer Interaction, Information Management, Intelligent Systems, Platform-based Development, Programming Languages, Social Issues and Professional Practice, Software Development Fundamentals, and Software Engineering. There are 82 projects in total **48 from Computer Science (CS) presented by 117 students, and 34 from Software Engineering (SE) presented by 86 students** bringing the total to 203 students across these categories. You will find a large diversity of projects including mobile applications, computer vision based intelligent driving assistant, cloud-based security resource sharing, an Alzheimer's prediction application and many more. You will not only find potential employees but excellent ideas as well that can be turned into products.

At NUST SEecs, we take pride in molding our bright entrants into well trained and appropriately groomed professionals in Computer Science, Software Engineering & Electrical Engineering disciplines. Our graduates are actively sought by the industry and our Alumni are occupying promising positions in some of the most prestigious industrial and business houses, both in public and private sectors. We hope that you will enjoy the hard work of our students and find the right candidate or the next big idea for your company.



Muhammad Mahad

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PROFESSIONAL PROFILE

Forward-thinking Computer Science student at NUST (SEECs) with a robust portfolio of internship experience spanning full-stack web development, game design, and ERP integration. Proven expertise in the **MERN stack**, **Next.js**, and **REST API** optimization through professional stints at HCI Expert and Vebtual. Architect of **Presence+**, a sophisticated BLE-based attendance system integrated with **Odoo ERP**, demonstrating a strong command over IoT protocols and real-time data synchronization. I thrive in collaborative team environments, ensuring seamless development workflows and high-quality solutions.

My expertise encompasses managing multiple projects simultaneously, communicating technical concepts to non-technical stakeholders, and adapting quickly to new technologies and industry trends. With a background that includes collaborative roles at M- Labs and the NUST Placement Office, I bring a unique blend of technical precision and professional discipline. I am dedicated to building scalable, production-ready solutions and contributing to cross-functional teams to deliver high-impact digital products. As a proven leader, I have consistently demonstrated effective conflict resolution skills and facilitated task distribution, thereby fostering productive and efficient teams.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science (SEECs) , Islamabad , 2.96 (2026)

INTERNSHIP EXPERIENCE

Vebtual

01-Jan-2025 - 30-Jun-2025

Completed internship at Vebtual as a Web Developer. Contributed to the development of responsive frontend interfaces, optimized API integrations, and helped launch two production-ready modules.

Alkhidmat Foundation Pakistan

25-Aug-2023 - 24-Sep-2023

Took part in different Social & Community Services activities and also learnt time management, organizational culture, professional skills, teamwork, workplace diversity, and problem-solving. Strived to be hardworking, honest, dedicated, and loyal at work.

NUST Placement Office (NPO)

01-Jul-2023 - 01-Sep-2023

Contributed to administrative tasks, including but not limited to the collection of data from NUST graduates for the QS World Ranking, and managed an internal event at RIC (NPO).

M-Labs

07-Jun-2024 - 12-Aug-2024

Learnt the fundamentals of game design, game development, and game art (2D & 3D). Worked in a team as a game designer to build a fully functional game based on a specific theme in two weeks.

HCI Expert PVT LTD

05-Jun-2024 - 10-Aug-2024

Contributed to the development of two complete websites from start to deployment, built APIs, and improved normal web UIs to make them responsive. Learnt MERN Stack, Hosting, React JS, Material UI, and Next JS during this period.

FINAL YEAR PROJECT

Presence+ – An Enhanced Bluetooth-Based Attendance System with Odoo Integration

This project introduces a contactless attendance system that leverages Bluetooth Low Energy (BLE) and ERP (Odoo) integration to automate student tracking and attendance. Students' smartphones broadcast unique BLE identifiers, which are detected by the teacher's Android app in real-time.

TECHNICAL EXPERTISE

Full-Stack Development (MERN & Next.js)

Adept at creating responsive, production-ready web applications using React and Node.js, with a focus on optimized UI/UX using Material UI and Next.js.

Collaborative Project Management

Possess essential professional skills in time management and workplace diversity while contributing to social and technical initiatives.

Data Structures, Algorithms, and Software Design

Proficient in applying advanced data structures and algorithmic optimization to solve complex computational problems, grounded in solid OOP principles.

BLE Systems & Odoo Integration

Developed a contactless attendance system using Bluetooth Low Energy (BLE) and integrated real-time data synchronization with the Odoo ERP platform via REST APIs.

Responsive Frontend Development

Focused on developing high-performance frontend interfaces and optimizing API integrations to ensure seamless user experiences across multiple production modules.

Git Version Control

Expert at teamwork and collaboration using modern technologies like Git and GitHub for software version control and project management.

Game Design

Mastered the fundamentals of game mechanics, map & level design, and asset pipelines, collaborating within teams to build fully functional production-ready games.

Technical Data Management & Administration

Proficient in administrative tasks like data handling, teamwork, and event planning & management on a large scale that requires coordinated technical logistics.



Effan Shakeel

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PROFESSIONAL PROFILE

Gameplay and tools programmer specializing in Unity, C#, and graphics programming. I build performant game systems, multiplayer features, and real-time rendering projects. Currently pursuing a side-hobby of integrating ML and RL systems in video games. This experience makes me a reliable game developer and graphics programmer/tech artist.

As a software engineer, I've organized multiple GDDs as well as designed the architecture for multiple SE projects, including but not limited to CySec pipelines, Mobile Apps in Flutter and AWS-hosted web apps. Since I have a large amount of experience tackling every domain involved in Software Engineering, this makes me a good fit for a position of Associate Software Engineer.

With a FYP focused on Reinforcement Learning in Video Games, targeting maximization of player enjoyability, I've had excessive research experience, enough to be able to find innovative and more effective solutions to any given problem.

I have experience in LLMs and ML, having built RAG focused systems and Image Classification and Object Detection through OpenCV. Having understood those workflows, my problem solving skills in AI-based projects makes me an ideal candidate for AI Engineering positions.

[Github](#)

EDUCATION

Bachelor of Computer Science

SEECs, Islamabad, 3.21 (2026)

INTERNSHIP EXPERIENCE

Grayhat Developers

16-Jun-2025 - 16-Aug-2025

- Ran and validated Making Remote Unity Builds from other systems - Integrated a Custom PlayroomKit SDK into two Unity Projects, adding multiplayer functionality to both of them - Ran a SDLC/GDLC on two development projects while working with other developers

Mindstorm Labs

07-Jun-2024 - 12-Aug-2024

Game Programmer - First month of internship was dedicated to learning game development basics - 2nd month of internship was involved in developing a game with a team of 3 people following the theme of "Slingshot" - The game won the award of "Best Mechanics" in the game jam submission

National Center of Artificial Intelligence

11-Aug-2025 - 25-Aug-2025

Cybersecurity Expert - Prototyped Different Methodologies to Transfer Encrypted Packets from One Device to another, primarily Wifi Direct, BLE and Google Connections. - Developed the Ping Attendance system, which used Falcon-512 PQ cryptography to encrypt a packet and send it from an instructor device to a student device via direct bluetooth connections. - Developed an instructor and a student app on flutter.

AstroApe Studios

15-Sep-2025 - 15-Jan-2026

Unity Developer - In charge of handling the game development and all backend logic for select studio projects - Integrating all the assets and fulfilling the requirements of the GDD provided by clients - Quality Assurance of Each Module in the project, testing to make sure it runs seamlessly.

FINAL YEAR PROJECT

Reinforcement Learning in Video Game Agents to Maximize Enjoyability

We're developing a testbed demo which utilizes the MultiGAIL reinforcement learning algorithm to create player and enemy personas that will learn from player actions and change the enemy's FSM tree behavior to maximize player engagement. <https://github.com/Sunbro26/FYP>

TECHNICAL EXPERTISE

Unity Developer

With almost 2 years of experience in Unity, I am good at game development and systems architecture.

Software Engineering

With a large portfolio of projects relevant to Frontend, DevOps, Mobile App Development, Databases, AI + ML + LLMs, I can work as an associate software engineer.

Software Engineering

With a large portfolio of projects relevant to Frontend, DevOps, Mobile App Development, Databases, AI + ML + LLMs, I can work as an associate software engineer.



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PROFESSIONAL PROFILE

I am a motivated and results-oriented graduate with extensive expertise in full-stack web development, WordPress development, and mobile application development. I have a proven track record of designing scalable, high-performance, and user-friendly digital solutions across web and mobile platforms. With a strong foundation in AI and machine learning, I actively explore intelligent systems and data-driven technologies to enhance application functionality, automate processes, and provide actionable insights.

In addition to my technical skills, I bring a keen eye for UI/UX design, creating visually appealing, intuitive, and user-centered interfaces that elevate the overall user experience. I am adept at working collaboratively in fast-paced environments, translating complex requirements into innovative solutions, and continuously learning emerging technologies to stay ahead in the ever-evolving tech landscape. My passion lies in combining creativity with technology to build impactful products that deliver measurable value for users and businesses alike.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.7 (2026)

INTERNSHIP EXPERIENCE

NationalCenterofArtificialIntelligence - NCAISectt,Pakistan

12-Jun-2023 - 01-Sep-2023

I worked on the project 'Smart Gaze-Based Annotation of Histopathology Images', where we developed a gaze-based annotation system using eye-tracking technology to capture pathologists' focus areas on slides. The system processed gaze data, including fixations and saccades, to automatically generate bounding boxes around regions of interest, significantly improving annotation efficiency. This approach reduced annotation time by approximately 65% compared to traditional bounding boxes and 85% compared to pixel-wise annotation, while also providing insights into enhancing labeling quality through advanced gaze-based techniques.

MachineVisionandIntelligentSystems(MachVIS)Lab - SEECS,NUST

16-Jun-2025 - 05-Sep-2025

I contributed to the 'PathoShield' project, which focused on predicting antimicrobial resistance (AMR) from MALDI-TOF mass spectrometry data. I implemented a deep learning pipeline to build a real-time, uncertainty-aware AI platform for clinical decision support and outbreak surveillance. The project addressed challenges in delayed diagnostics and non-adaptive surveillance systems by integrating continually adapting models, thereby improving diagnostic intelligence and enabling timely, evidence-based clinical decisions.

FINAL YEAR PROJECT

PathoShield: AI-Driven Antimicrobial Resistance Prediction from MALDI-TOF Data

PathoShield is a deep learning-based platform designed to predict antimicrobial resistance (AMR) in real-time using MALDI-TOF mass spectrometry data. Addressing the growing global threat of AMR, the system overcomes challenges posed by delayed diagnostics, inappropriate antibiotic use, and fragmented, non-adaptive surveillance systems. By leveraging uncertainty-aware AI models, PathoShield provides accurate, interpretable predictions that support timely clinical decision-making and enable healthcare professionals to prescribe effective treatments with confidence. The platform also incorporates adaptive learning to continuously update its predictive models, facilitating real-time outbreak monitoring and enhancing public health responses. Through this integrated approach, PathoShield not only improves diagnostic efficiency but also empowers clinicians and healthcare systems to proactively tackle resistant infections, bridging the gap between laboratory data and actionable clinical insights.

TECHNICAL EXPERTISE

Full-Stack Web Development

Skilled in designing and developing scalable, responsive web applications using modern front-end and back-end technologies. Experienced with HTML, CSS, JavaScript, React, Node.js, Express, and RESTful APIs, with a strong focus on creating seamless user experiences and robust server-side functionality.

WordPress Development

Proficient in building, customizing, and maintaining WordPress websites with custom themes, plugins, and performance optimizations. Experienced in PHP, MySQL, and WordPress ecosystem to deliver user-friendly, secure, and SEO-optimized solutions for businesses and projects.

Mobile Application Development

Expertise in developing cross-platform mobile applications using Flutter and Dart, creating responsive, feature-rich apps for both Android and iOS. Skilled in integrating Firebase, REST APIs, and third-party services, with attention to performance, maintainability, and smooth user experience.

Artificial Intelligence & Machine Learning

Enthusiastic about AI/ML, with hands-on experience in deep learning, computer vision, and predictive modeling. Familiar with frameworks like TensorFlow and PyTorch, capable of implementing data preprocessing pipelines, training models, and deploying intelligent systems for real-world applications.

UI/UX Design

Experienced in designing intuitive and engaging user interfaces and experiences using Figma and other design tools. Skilled in wireframing, prototyping, and creating visually appealing layouts that enhance usability, accessibility, and overall product experience.



Shaheer Kashif

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PROFESSIONAL PROFILE

A motivated computer science student with experience in full-stack development, AI, and machine learning, eager to apply technical skills to innovative projects.

EDUCATION

BSCS

SEECs, Islamabad, Islāmābād, Pakistan, 3.3 (2026)

INTERNSHIP EXPERIENCE

Image Analysis Lab, SINES

01-Jun-2024 - 05-Aug-2024

• Gained hands-on experience in AI/ML and developed a foundational machine learning project. • Explored image classification, segmentation and computer vision using Roboflow.

Dense Fusion

01-Aug-2024 - 04-Nov-2024

• Designed and developed a MERN-based web platform from scratch using Figma for UI/UX and Sentinel for backend data integration. • Successfully deployed an MVP tested on a 20,000-acre field, receiving positive user feedback.

Norenztech

01-Jun-2025 - 31-Jan-2026

• Collaborated with a team to build and maintain multiple production-level platforms, including EmploiRapide, Sobee, VisionPME, DpaDashboard, and MartialArtsJobsBoard. • Delivered end-to-end features using React, Node.js, Prisma, PostgreSQL, Django, Laravel, Vite, Next & Nest, building scalable APIs and high-performance frontends for production.

FINAL YEAR PROJECT

QeFi - Private Blockchain for Multi-Domain System

QeFi is a private blockchain framework designed to securely coordinate multiple administrative domains while preserving autonomy and trust. It enables controlled data sharing, policy enforcement, and interoperability across domains without relying on a central authority.

TECHNICAL EXPERTISE

Full-Stack Developer

End-to-End Development Built and maintained full-stack applications by delivering complete features across frontend, backend, and databases for production systems. Team-Based Engineering Worked closely with cross-functional teams to implement scalable solutions using modern web technologies and best prac ...

Leadership and Event Management

Team Leadership Led and coordinated large teams to execute high-impact university events and manage external stakeholders. Operations & Representation Handled fundraising, finances, logistics, and formal delegation representation.

Technical Leadership and System Design

Technical Direction Translate product requirements into scalable technical architecture aligned with business objectives. Engineering Oversight Lead system design decisions, code reviews, and enforcement of best engineering practices across teams.



Ahmed Mohiuddin Shah

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PROFESSIONAL PROFILE

Seeking an internship opportunity to enhance my skills in software development, hardware design, and project management. Eager to contribute to innovative projects while gaining valuable hands-on experience in a dynamic and collaborative environment.

EDUCATION

Matric

APSACS Seven Streams , Quetta , 1037 (2020)

ICS

Garrison Degree College , Quetta , 1008 (2022)

INTERNSHIP EXPERIENCE

FINAL YEAR PROJECT

GitHub

User Name: Ahmed-Mohiuddin-Shah Notable Projects: Facial Recognition Class Attendance System using opencv 3D Maze game in C using raylib 3D MultiPlayer PropHunt Game in Java

Hostelo (End Semester Project)

Created A full stack Hostel Management system to manage everyday functionalities of NUST Hostels through an online and Easy to use interface

MAZ-NAV (Autonomous Maze Solver)

MAZ-NAV is a multi-platform Maze navigation robot which employs the use of computer vision to solve a maze and navigate it through the MAZ-NAV rover without human intervention

3D Printer (Big Bertha)

Design and built my own 3D printer from scratch and limited resources. Her name is Big Bertha and has a build volume of 170mmx170mmx170mm.

TECHNICAL EXPERTISE



Muhammad Sami Ullah

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PROFESSIONAL PROFILE

Final-year Computer Science student at NUST with a strong inclination toward product research, customer discovery, and tech-driven problem solving. Experienced in machine learning, blockchain systems, and full-stack development through internships and research-oriented projects, including an LLM-based clinical decision support system. Backed by five-plus years of freelance writing and marketing consultancy, bringing a rare blend of technical execution, user insight, and communication clarity. Proven leadership in high-impact university events and cross-functional collaboration, with long-term interests in AI, LLMs, and scalable digital products.

EDUCATION

Bachelor of Science in Computer Science

SEECs, Islamabad, 2.58 (4)

INTERNSHIP EXPERIENCE

AgriStreams

07-Jun-2025 - 01-Sep-2025

Hands-on Experience in designing, implementing, and optimizing blockchain for private blockchain networks for banking and e-commerce applications

Image Analysis Lab

08-Jun-2024 - 08-Aug-2024

Machine Learning Internee Designing, implementing, and optimizing advanced machine learning algorithms for image analysis.

NK Internationals

08-Aug-2022 - 25-Jan-2026

Virtual Assistant Work • Remote Handling of Karachi Staff. • Stakeholder Coordination and handling real users

FINAL YEAR PROJECT

MedLingo-Medical LLM with Mixture of Experts

MedLingo is a clinical decision-support system that uses a Mixture-of-Experts (MoE) framework with specialized models for different medical domains. By integrating text, imaging, and electronic health records, it delivers accurate, scalable, and context-aware insights to support reliable healthcare decision-making

TECHNICAL EXPERTISE

Machine Learning & Applied AI

Experience in designing, implementing, and optimizing machine learning models for real-world problems. Hands-on work includes image analysis pipelines, clustering-based recommender systems, and applied research projects, with exposure to deep learning concepts through academic training and internships.

Blockchain Development

Practical experience in blockchain fundamentals and private blockchain systems through internship work. Involved in designing, implementing, and optimizing blockchain-based solutions with a focus on system efficiency and real-world applicability.

Data Structures & Algorithmic Problem Solving

Solid understanding of core data structures and algorithms, applied in coursework, projects, and system design. Experienced in using algorithmic thinking to optimize application performance and handle large datasets efficiently.

Product & User-Centric Thinking

Applied user-focused thinking across technical projects by incorporating feedback, understanding real user needs, and aligning technical solutions with business and product goals.

Large Language Models & AI Systems

Worked on LLM-based applications, including a medical decision support system using advanced model architectures. Experienced in system design, model integration, and applying AI to domain-specific problems.

Software Development & Programming

Strong foundation in software development using Java, C, C++, and Python. Developed both academic and personal projects, applying object-oriented principles, debugging, and structured problem-solving techniques.

Event Planning & Execution

Led planning, coordination, and execution of high-impact university events including NUST Orientation, Alumni Homecoming, TEDxNUST, Olympiads, and literary festivals. Experienced in logistics, timelines, and multi-team coordination.

Crisis Handling & On-Ground Decision Making

Developed strong problem-solving skills through real-time event management, handling unforeseen challenges, operational constraints, and fast-paced decision-making environments.

Professional Communication & Public Engagement

Refined communication skills through leadership roles, marketing consultancy, and public-facing event work, enabling confident engagement with diverse audiences and stakeholders.

Technical Marketing & Content Strategy

Over five years of experience in technical writing, scriptwriting, and content marketing. Worked closely with clients to translate technical products into clear value propositions through blogs, scripts, and digital content.



Bissal Javaid

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PROFESSIONAL PROFILE

Final-year Computer Science student with interdisciplinary experience in cybersecurity, machine learning, and generative AI, focused on DDoS detection using real-world network traffic datasets. Seeking an entry-level or research-oriented role to apply AI-driven threat detection, network security, and data analysis skills in real-world cyber defense environments.

EDUCATION

BS in Computer Science

SEecs, Islamabad, 3.29 (2026)

INTERNSHIP EXPERIENCE

SEecs

13-Nov-2024 - 15-Jun-2025

Participated in the conceptualization and design of the generalized rule-driven network traffic filtering mechanism. Conducted rigorous testing of the proposed solution, meticulously collecting and analyzing data to derive results. Played a role in the drafting and refinement of the research paper, documenting the methodology, findings, and conclusions.

ONT Lab SEecs

01-Jun-2025 - 01-Sep-2025

Worked with network simulation tools, including Mininet and Mininet-Optical for software-defined and optical network experimentation. Designed and simulated multiple optical network topologies, analyzing connectivity, routing behavior, and performance characteristics.

FINAL YEAR PROJECT

Development of a DDoS Network Traffic Dataset for Deep Learning-Based Prediction and Prevention of Attacks

This project addresses the critical gap by conducting a thorough analysis of existing DDoS datasets to highlight their limitations and then developing a new dataset that includes diverse DDoS attack traffic and corresponding normal traffic. The dataset will be used to train and evaluate deep learning models capable of accurately detecting and predicting DDoS attacks. The goal is to enhance the reliability and early detection capabilities of intrusion detection systems using real-world-like, labeled traffic data suitable for deep learning applications.

TECHNICAL EXPERTISE

Cybersecurity & Network Security

Research experience in DDoS detection, network traffic analysis, and attack mitigation using real-world datasets. Familiar with packet inspection, traffic filtering, and Linux-based networking environments.

Machine Learning for Security

Applied machine learning techniques for the generation of network traffic for improving quality of dataset. Experienced in data preprocessing, feature engineering, model evaluation, and cross-validation on security datasets.

Generative AI & AI-Driven Security

Explored generative AI and deep learning approaches for synthesizing and analyzing network traffic data. Interested in

interdisciplinary applications of generative models for cybersecurity, data augmentation, and adversarial resilience.

Network Simulation & Optical Networks

Worked with network simulation tools including Mininet and Mininet-Optical to design and simulate software-defined and optical network topologies, analyzing routing behavior and performance characteristics.

Security Tools & Traffic Interception

Experienced with mitmproxy and traffic interception techniques for filtering, blocking, and analyzing network flows based on rules, keywords, and behavioral patterns.

Software & Application Development

Skilled in building web and cross-platform applications using React, Flutter, Node.js, and Tailwind CSS, with a focus on clean architecture, MVVM, and modular design.

Data Handling & Analysis

Proficient in handling large, high-dimensional datasets, performing preprocessing, feature selection, and exploratory data analysis for machine learning and security-focused projects.



Syed Fahad Shah

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PROFESSIONAL PROFILE

Full Stack Software Engineer with hands-on experience in React, Next.js, Node.js, and MongoDB, specializing in building scalable web applications and business systems. Proven ability to develop CRM platforms, AI-powered solutions, and real-time dashboards with secure authentication and optimized performance. Strong problem-solving skills with practical exposure to AI/LLM integration, API development, and modern deployment workflows. Passionate about delivering efficient, user-centric software solutions.

EDUCATION

Computer Science

SEECs , Islamabad , 2.86 (2026)

INTERNSHIP EXPERIENCE

Graysol

01-Jul-2024 - 30-Sep-2024

Developed fully responsive company website from Figma designs using MERN stack. Implemented dynamic frontend and backend features ensuring cross-browser compatibility and mobile responsiveness.

JFF Consultant

15-Jun-2025 - 16-Jan-2026

Developed Sales CRM system with companies, contacts leads, quotes, pipelines, opportunities and business card in automated flow with interactive analytics dashboard using Recharts for data visualization. • Integrated AI-powered chatbot with database and APIs to answer queries across sales and finance systems. • Implemented Excel file upload & chunking for bulk data import with cancellation support on serverless deployments in Sales CRM. • Built Finance system for journal entries, accounts, invoices, and image-based invoice processing with full CRUD operations. • Created JFF website and UET Alumni portal with 100+ users, enabling events, job posting, In-app and email notification workflows and using Cloudinary for image storage. • Integrated webhooks & Clerk authentication for real-time data sync with MongoDB and secure user authentication.

FINAL YEAR PROJECT

Web Application Firewall: A Hybrid Approach Using Signatures and Machine Learning

Designed and implemented a hybrid Web Application Firewall combining OWASP ModSecurity rules with a Machine Learning model (LSTM + GCN) to detect and classify web attacks in real time. Built a full-stack system with NGINX reverse proxy, Flask backend, MongoDB logging, and Next.js admin dashboard. Achieved multi-class attack detection with automated threat response and dynamic rule generation.

TECHNICAL EXPERTISE

React.js

Experienced in building dynamic and responsive user interfaces using React. Developed multiple dashboards, CRM systems, and portals with reusable components, state management, API integration, and real-time data visualization.

Next.js

Proficient in developing full-stack applications using Next.js with server-side rendering, API routes, authentication, and optimized performance. Built admin dashboards and AI-powered applications with scalable architecture.

Node.js

Hands-on experience in backend development using Node.js for building REST APIs, business logic, and real-time systems. Implemented authentication, file processing, and database-driven applications.

MongoDB

Skilled in designing NoSQL database schemas, performing CRUD operations, and integrating MongoDB with Node.js applications. Used MongoDB for CRM systems, logging, and real-time data storage.

Tailwind CSS

Expertise in creating modern, responsive, and mobile-first user interfaces using Tailwind CSS. Implemented custom UI designs from Figma with pixel-perfect accuracy.

Rest API Development

Designed and implemented secure RESTful APIs with authentication, validation, and database integration. Developed APIs for CRM, finance systems, and AI-based applications.

AI / LLM Integration

Experience in integrating Large Language Models and AI tools into applications. Built AI chatbots and offline AI copilots using local LLMs, retrieval-augmented generation, and OCR.

OCR & Document Processing

Implemented OCR-based solutions to extract data from images and documents. Used OCR pipelines in finance invoice processing and AI-powered document analysis systems.

Excel File Processing

Developed robust Excel file upload and processing modules with chunking, validation, and cancellation support for bulk data import in CRM applications.

Authentication & Webhooks

Integrated secure authentication using Clerk and implemented webhooks for real-time synchronization and event-driven workflows in full-stack applications.

Git & GitHub

Experienced in version control using Git and GitHub for collaborative development, branching strategies, pull requests, and CI/CD workflows.

DevOps & Deployment (Vercel, GitHub Actions)

Hands-on experience deploying full-stack applications using Vercel and automating workflows with GitHub Actions for continuous integration and delivery.

Python & Machine Learning

Applied Python and machine learning techniques in projects such as sepsis detection and AI-based security systems. Worked with ML models, preprocessing, and performance evaluation.



Muhammad Hamza

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PROFESSIONAL PROFILE

Seeking a full-stack developer position where I can leverage my expertise in various front-end technologies to create visually appealing and user-friendly interfaces and performant backend, contribute to innovative projects, and collaborate with a dynamic team to deliver exceptional web experiences.

EDUCATION

CS

SEECs , Islamabad , 3.71 (2026)

INTERNSHIP EXPERIENCE

Sentinel AI

01-Jun-2023 - 21-Jul-2023

During my tenure as an ML engineer, I specialized in computer vision using technologies like OpenCV, YOLOv8, ByteTracker, and supervision, and working extensively with network cameras. My contributions involved enhancing their codebase through the implementation of best practices, optimizing algorithms, and using appropriate data structures.

FINAL YEAR PROJECT

AceVision: Tennis Gameplay Analyzer Using Computer Vision

I designed and developed a computer vision based tennis gameplay analysis system that processes match videos to track player movement and on-court actions. The system generates actionable performance statistics such as shot distribution, positioning patterns, and movement efficiency to help players and coaches objectively evaluate gameplay and improve training decisions. The project focuses on converting raw visual data into meaningful insights for performance analysis.

TECHNICAL EXPERTISE

Web Developer

Git JavaScript Node.js Golang DBs: PostgreSQL, MySQL, MongoDB ORMs: Prisma, Sequelize Frameworks: React.js, Next.js, Vue.js



Muhammad Sarmad Saleem

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PROFESSIONAL PROFILE

I am a final year Computer Science student and a Machine Learning engineer with expertise in full-stack development across multiple frameworks. I focus on building AI-enabled systems using Deep Learning and Generative AI, developing and deploying these systems while learning and implementing industry standard tools.

EDUCATION

Computer Science

School of Electrical Engineering & Computer Science (SEECS) , Islamabad , 3.40 (4)

INTERNSHIP EXPERIENCE

Search 'O Pal

01-Apr-2024 - 31-Oct-2024

Worked as Software Developer & ML Engineer. Developed an assessment module for hiring with support for multiple question types (MCQ, true/false, short answer), implemented a real-time video interview feature using WebRTC, and integrated a chatbot to assist candidates. Developed a job recommendation system to suggest relevant skills based on job titles for companies, and built a resume extractor to auto-fill candidate details for job applications.

DAAD Research @ Intern Robotics Research Lab, RPTU, Germany

01-Jul-2025 - 31-Jul-2025

Worked as a DAAD Research Intern, focusing on my final-year project to model and measure glacier retreat using satellite imagery and climate data. Conducted a workshop to present findings to professors and actively participated in various lab activities and research discussions.

Machine Vision & Intelligent Systems Lab, NUST

01-Oct-2024 - 31-Jan-2026

Worked on implementing multimodal techniques for crop field classification using satellite imagery, evaluating performance across different regions and years. Currently pursuing my final-year project in the same lab, focusing on predicting future glacier retreat through remote sensing data

FINAL YEAR PROJECT

GlacioVision: Predicting Future Glacier Extent & Elevation

An AI-enabled web platform that predicts next-year glacier masks and elevation changes using satellite imagery and climate data. The system estimates glacier area and volume changes over time, with a web-based dashboard for visualizing glacier masks, elevation trends, and historical changes interactively.

TECHNICAL EXPERTISE

Machine Learning and Deep Learning

Expert in developing machine learning and deep learning models using various technologies such as PyTorch, TensorFlow, and scikit-learn. Experienced in working with diverse datasets and possessing strong, in-depth knowledge of machine learning, deep learning, and artificial intelligence concepts. Has worked e ...

Generative AI & LLMs

Expert in developing Generative AI solutions using large language models and frameworks such as LangChain, along with other modern AI tools and libraries. Experienced in building end-to-end GenAI applications including prompt engineering, retrieval-augmented generation (RAG), agent-based workflows, and model ...

Full Stack Development

Full-stack developer with strong experience in building scalable web applications using the MERN stack (MongoDB, Express.js, React, Node.js) as well as backend frameworks such as Django, Flask, and FastAPI. Skilled in designing RESTful APIs, developing secure and high-performance backend services, and creatin ...



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PROFESSIONAL PROFILE

Computer science student and deep learning researcher

EDUCATION

bachelor of computer science

School of Electrical engineering and computer science , Islamabad , 3.78 (2022)

INTERNSHIP EXPERIENCE

TUKL deep learning lab

01-Jun-2023 - 01-Sep-2023

Conduct research in AI.

FINAL YEAR PROJECT

RIS optimization using Multi agents

TECHNICAL EXPERTISE

Deep learning researcher

Conducted research in TUKL lab and MachVis lab. Published a paper on glacier monitoring through machine learning.



Muhammad Sameer Amjad

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PROFESSIONAL PROFILE

Final-year Computer Science undergraduate at NUST (CGPA 3.56) with strong experience in full-stack web development, artificial intelligence, and research-driven problem solving. Hands-on experience building and deploying scalable production systems using modern JavaScript frameworks, alongside applied research in deep learning, large language models, and Reconfigurable Intelligent Surfaces for next-generation wireless communication. Published researcher with contributions in AI for business, finance, and environmental monitoring, and a CFA Level I candidate with growing expertise at the intersection of technology and finance. Adept at translating complex technical ideas into impactful, real-world solutions.

EDUCATION

Matriculation

Kims High School, NST Sargodha , Sargodha , 1058 (2020)

Intermediate

Punjab Group of Colleges, Sargodha , Sargodha , 1010 (2022)

Bachelors of Science in Computer Science

School of Electrical Engineering and Computer Science (SEECS), NUST , Islamabad , 3.56 (2022)

INTERNSHIP EXPERIENCE

Machine Vision and Intelligent Systems Lab, SEECS

01-Jun-2024 - 01-Mar-2025

Contributed to deep learning-based projects, applying advanced techniques to solve real-world problems such as Glacier Monitoring. Also authored a systematic research paper analyzing recent applications of Machine Learning and Deep Learning (DL) in Business and Finance

Research, Innovation & Commercialisation, NUST

01-May-2024 - 30-Aug-2024

Developed and deployed the NUST Digital Research Repository using the MERN stack, successfully launching a funded institutional project now live and used by over 1500+ faculty members. I designed the frontend interface and built APIs, improving user experience by 30% based on feedback, while enabling seamless access to over 10,000+ research publications.

Codenext Solutions SMC Limited, Islamabad

01-Nov-2024 - 01-Jan-2026

Developed and maintained production-level, fully developed systems using a wide range of modern technologies. Contributed to long-serving systems, ensuring high performance, scalability, and reliability.

FINAL YEAR PROJECT

Realtime RIS Optimization for 6G networks using Multi Agent Framework

Current methods for controlling Reconfigurable Intelligent Surfaces (RIS) in wireless networks typically rely on static, model-based optimization techniques—such as alternating optimization, successive convex approximation (SCA), semidefinite relaxation (SDR), or MMSE beamforming—tailored to fixed or semi-static environments. While these approaches work well under controlled assumptions, they struggle to cope with real-world dynamics like user mobility, fast-fading channels, or environmental interference. Existing literature lacks systems that can autonomously monitor changing conditions and adapt RIS configurations in real time. This gap impedes the scalability and resilience of RIS deployments in next-generation 6G infrastructure.

TECHNICAL EXPERTISE

Full-Stack Web Development & Software Engineering

Proficient in building scalable, production-grade web applications using modern frontend frameworks (React, Next.js, Angular) and backend technologies (Node.js, Next.js). Experienced in designing and consuming RESTful and GraphQL APIs, implementing secure authentication, and managing databases across SQL, Mon ...

Artificial Intelligence & Machine Learning

Strong foundation in machine learning and deep learning, with hands-on experience in CNNs, LLMs, and applied AI research. Skilled in developing, training, and evaluating AI models for real-world use cases across healthcare, finance, environmental monitoring, and wireless communications.

Research, Data Analysis & Algorithm Design

Experienced in research-oriented development, including experimental design, data preprocessing, statistical analysis, and performance evaluation. Comfortable translating theoretical concepts into efficient algorithms and deployable systems, supported by peer-reviewed publications.

Cloud, Databases & System Design

Familiar with cloud-based architectures and services (including AWS), database schema design, optimization, and system scalability. Adept at building reliable, maintainable systems with a focus on performance, usability, and long-term sustainability.



Mirza Muhammad Abdul Ahad

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PROFESSIONAL PROFILE

Computer Science student from NUST with strong foundations in modern web development and emerging expertise in information/network security. Skilled in creating responsive, scalable front-end solutions using React, and JavaScript, with additional experience in backend development using PHP, MySQL, and MongoDB. Currently expanding technical proficiency in Information/Network Security and Cybersecurity, focusing on data security over the network and through encryption, firewalls, and VPNs etc. Committed to producing clean, efficient systems while continuously advancing through self-driven learning and practical project work.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science, NUST , Islamabad , 2.59 (2022)

INTERNSHIP EXPERIENCE

WALEE NUST CoE

17-Jun-2024 - 26-Aug-2024

Weather app, Calculator App, Todo list, Ecommerce store

PARCO MCR

16-Jun-2025 - 25-Jul-2025

Data cleaning and structuring system, Data visualization, IT management

FINAL YEAR PROJECT

AegisAI

This is an AI based Web Application Firewall, using GPU boosting and AI to enhance security for organizations.

TECHNICAL EXPERTISE

Web Development

I am proficient in HTML/CSS/JavaScript along with advanced technologies like MERN stack and deployment tools like Vercel.

Version Control

I use Git/Github in my projects and am well versed in these technologies.

Networking

I am proficient with the Cisco Packet Tracer along with WebSockets for adding real-time communication in web apps.

AI/ML

I have worked with pytorch, scikit learn to make ML/DL models along with implementing AI algorithms.

ERP

I have worked in SAP and SAP technologies and seen how they help in running the business of large organizations.

Programming Languages

I am well versed in Basic to Advanced level coding in Python, C/C++/C#, Java, Javascript, Bash (Shell scripting)

App Development

I can develop apps in Python tkinter, pyqt5 and C + GTK



Maheen Ahmed

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PROFESSIONAL PROFILE

Computer Science undergraduate with strong research and applied experience in computer vision and deep learning. Has worked in academic lab and international research environments (Summer@EPFL Intern, MITACS Intern @ UAlberta) on object detection, segmentation, synthetic data generation, and differentiable image modeling. Experienced with modern deep learning architectures including CNNs, Vision Transformers, GANs, and diffusion-inspired pipelines, alongside solid backend and full-stack development skills. Comfortable bridging theory and implementation, with hands-on experience in experimentation, model analysis, and building end-to-end AI systems.

EDUCATION

Computer Science

SEECs , Islamabad , 3.87 (2026)

INTERNSHIP EXPERIENCE

Summer@EPFL

02-Jun-2025 - 01-Aug-2025

-Worked at IVRL headed by Prof. Sabine Susstrunk. -Made the occlusion-based mathematical Dead Leaves model differentiable through gaussian primitives based on 2D/3D Gaussian splatting. -Studied 3D/2D Gaussian Splatting and repurposed gaussians to act as primitives -Studied frequency domain properties of generated images -Experimented with other primitives like triangle splats to better replicate natural image properties.

TUKL Deep Learning Lab

03-Jun-2024 - 31-May-2025

- Worked on salient/co-salient object detection pipelines for binary segmentation of rust in wheat crop datasets, under the supervision of Dr.Faisal Shafait. - Explored utilizing salient and co-salient object detection(SOD and COSOD) for wheat rust segmentation on the NWRD/NWRDF datasets -Applied transfer learning to 5 SOTA COSOD models,some transformer-based, and fine-tuned results - Applied architectural changes to best-performing mode

ADNOC

01-Jan-2025 - 31-Jan-2026

Received training for using Oracle, Maximo, and SAP ERPs

Vision Architech

03-Jun-2024 - 31-Aug-2024

Worked on creating endpoints and setting up the database through FastAPI and PostgreSQL for an AI-powered Analytics web application

University of Alberta

01-Jun-2026 - 30-Sep-2026

Will be working on visual motion analysis under the supervision of Dr. Li Cheng.

FINAL YEAR PROJECT

Decentralized Internet of Agents

Google's mission is to organize the world's information. But what if we could orchestrate the world's agentic intelligence? Our project,

DIA (Decentralized Internet of Agents), aims to create an ecosystem for an agentic marketplace that builds Multi-Agent Systems (MAS). In essence, we will implement the proposed, novel concept of 'Internet of Agents.' Today, when you need to start a business, you Google 'how to start a company' and get a million links. With DIA, you simply say, 'start a tech company,' and our network instantly assembles the perfect team: market research agents analyze opportunities, legal agents draft incorporation docs, design agents create your brand, and financial agents build your business model - all working together in real-time to deliver a complete startup package. We will create a platform that offers the following main services: Allow people to upload their agents to a network and to be able to optimal outputs corresponding to their prompts. In the former, we can set up a payment mechanism where the agent owner gets income according to the number of runs the agent goes through. In the latter case, the most optimal, available agents will be retrieved from the network for a cost, communicate in a multi-agent environment for each phase-wise sub task, and finalize an output. As such, we will be building a network of agents and a platform to interact with that network of agents. More specific objectives are network initialization, task decomposition, heterogeneous agent integration, MCP tool integration, agent discovery and selection topology (for which we have designed a fractal scaling type architecture), and platform development. The market for agentic AI is projected to hit \$100+ billion by 2034, and we're building the platform that captures the network effects of intelligent collaborations for the future.

TECHNICAL EXPERTISE

Python

Ample experience using Python across both research and industrial settings, including building deep learning pipelines, data processing workflows, backend services, and desktop applications. Extensive use of scientific and ML ecosystems such as NumPy, pandas, PyTorch, TensorFlow, JAX, and OpenCV.

Computer Vision

Strong background in computer vision with hands-on experience in image processing, object detection, and semantic/co-salient segmentation. Applied CV techniques in real-world domains including agricultural disease detection, facial recognition systems, and synthetic image generation for research purposes.

Deep Learning

Extensive experience designing, training, and fine-tuning deep learning models for vision tasks. Worked with CNNs, Vision Transformers (ViT), GANs, and diffusion-inspired pipelines, including architectural modifications and performance-driven experimentation for research publications.

Signal and Image Processing

Applied signal processing concepts in both spatial and frequency domains to analyze image characteristics. Conducted frequency-domain studies comparing synthetic and natural images, with emphasis on understanding model behavior and data distributions.

Web Development (MERN Stack and Next.js)

Hands-on experience building full-stack web applications using React, Node.js, MongoDB, SQL, and JavaScript. Integrated third-party APIs (e.g., Google Maps) and implemented community-driven features with scalable backend support.

Backend Development & APIs

Experience developing backend services for AI-powered applications using FastAPI and PostgreSQL. Designed RESTful APIs, database schemas, and data pipelines to support analytics-driven systems in an industrial environment.



Saim Mahmood

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PROFESSIONAL PROFILE

Computer Science undergraduate specializing in **AI/ML, Distributed Systems, and Full-Stack Engineering**, with proven experience building **production-grade AI solutions, scalable data pipelines, and intelligent applications**. Demonstrated ability to **architect systems from scratch**, lead technical teams, and deliver measurable outcomes using modern ML frameworks and cloud-native tooling. Actively seeking roles where **AI, systems design, and real-world impact intersect**.

EDUCATION

BSCS

SEECs , Islamabad , 3.04 (2026)

INTERNSHIP EXPERIENCE

Glowlogix

11-Jun-2024 - 11-Sep-2024

- Role : Software Engineer Intern - Built and optimized scalable full-stack applications using Laravel, React, SQL, and RESTful APIs.
- Refactored backend logic and normalized database schemas, resulting in faster queries and improved system stability. - Contributed to production deployments within agile teams, adhering to clean code and version control best practices.

Data BI

16-Jun-2025 - 15-Dec-2025

- Role : Data and AI Associate - Founded and operationalized the AI/ML function at the company, architecting complete pipelines for data extraction, preprocessing, feature engineering, and inference. - Designed and deployed AI-powered PowerBI dashboards, enabling automated insights and reducing manual analysis effort by ~30–50%. - Implemented containerized experimentation workflows using Docker and Azure, improving model reproducibility and deployment readiness. - Worked closely with stakeholders to translate raw data into decision-ready intelligence, directly supporting business strategy.

FINAL YEAR PROJECT

A Domestic Services Super App

- A cloud-native mobile application exploring how fragmented, recurring service interactions can be reimagined into a single intelligent ecosystem. The project focuses on designing a scalable, adaptive platform that enhances user experience, coordination, and transparency across multiple service domains. - Architected as a full-scale mobile application with cloud-backed infrastructure and modular services. - Integrates real-time communication, location intelligence (maps), and dynamic service discovery. - Emphasizes system scalability, reliability, and extensibility, enabling seamless integration of independent agents. - Prioritizes user-centric design, operational efficiency, and intelligent orchestration of services. - Note: Technical depth, architecture, and implementation details intentionally abstracted for academic evaluation.

TECHNICAL EXPERTISE

Computer Vision Systems

Built real-time vision applications combining object detection, multi-object tracking, semantic segmentation, and behavioral analytics. Delivered production-ready pipelines using YOLOv8, ByteTrack, DeepLabV3, OpenCV, and CUDA acceleration.

Large Language Models & Intelligent Systems

Developed LLM-driven applications leveraging retrieval-augmented generation (RAG), abstractive summarization, and contextual

reasoning. Experience integrating Gemini, LLaMA, and LangChain-based workflows into scalable systems.

Distributed Systems & Search Infrastructure

Engineered fault-tolerant distributed architectures with sharding, replication, and leader election. Designed high-throughput search systems using Apache Solr and ZooKeeper, validated through performance and load testing.

Backend & Full-Stack Engineering

Implemented scalable backend services and full-stack applications using Python, Laravel, React, and RESTful APIs. Strong understanding of database design, schema optimization, and system modularity.

Data Analytics & Decision Intelligence

Built automated analytics pipelines and interactive dashboards using PowerBI, enabling real-time insights and reducing manual reporting overhead.

Cloud, DevOps & MLOps Foundations

Containerized and deployed applications using Docker and Docker Compose, with cloud experimentation and workflow orchestration on Microsoft Azure. Familiar with reproducible ML workflows and environment management.



Muniba Noor

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PROFESSIONAL PROFILE

Motivated and detail-oriented Developer with a strong foundation in programming and a passion for creating engaging, user-centric applications. Proficient in modern technologies and tools, with hands-on experience in building responsive interfaces and interactive experiences. Eager to contribute to innovative projects while continuously expanding my skill set in a collaborative environment.

EDUCATION

BSCS

SEecs, Rawalpindi, 3.03 (2026)

INTERNSHIP EXPERIENCE

Nokia

07-Jul-2025 - 12-Aug-2025

During my internship at Nokia, I worked across multiple departments including Network Operations, Cloud, RAN, Transport, IP, and Core. I studied mobile network evolution from 2G to 5G, explored cloud virtualization platforms, learned about RAN equipment, and transport mediums. I also gained exposure to IP networking, VLANs, routing protocols, and IMS-based core architecture.

Robotics World Pvt Ltd

03-Jun-2024 - 31-Jul-2024

Collaborated with the team to conceptualize and design engaging game mechanics and storylines. Applied programming skills to develop game features along with participation in resolving the bugs for smooth gaming experience in 2D and 3D games.

FINAL YEAR PROJECT

A Hybrid AI Framework for Dynamic Behavioral Adaptation

The scope of this project covers an end-to-end development pipeline within the Unity engine. This includes building a functional combat testbed, a robust telemetry system for tracking player data, and training machine learning models that can actually model opponent behavior. By using the Unity MLAgents toolkit and the ONNX runtime for efficient performance, the framework is designed

to run smoothly on standard consumer hardware. The goal is to provide a practical toolset for developers to create adversaries that adapt to a player's unique style, keeping the challenge fresh and engaging.

TECHNICAL EXPERTISE

Skills

HTML, CSS, JS MongoDB, MySQL Unity- C#, Computer Graphics C, C++, Python, Java ML, DSA, CN, OOP, AI



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PROFESSIONAL PROFILE

Computer Science undergraduate at NUST (CGPA 3.5) with experience building **end-to-end, production-grade AI systems** across **NLP, computer vision, mass spectrometry-based spectral analysis, and time-series forecasting**. Strong ownership of the full ML lifecycle, from **automated data acquisition (Selenium, BeautifulSoup)** and **large-scale preprocessing** to **transformer/CNN model development and optimization**. Hands-on experience with **RAG pipelines, PEFT/LoRA, quantization, knowledge distillation, and federated learning**. Proven ability to **deploy and scale ML services** using FastAPI, Docker, Kubernetes, and cloud-native microservices with low-latency constraints.

EDUCATION

BS Computer Science

SEECS, Islamabad, 3.54 (2026)

INTERNSHIP EXPERIENCE

truID

30-Jun-2025 - 22-Aug-2025

Engineered production-grade computer vision and NLP systems for identity verification, owning the pipeline from data acquisition and automated scraping (Selenium, BeautifulSoup) to model training, optimization, and deployment. Developed and benchmarked state-of-the-art CNN and Transformer architectures (Xception, EfficientNet, ConvNeXt, ViT) for card liveness detection and replay-attack prevention under real-world constraints. Built and fine-tuned custom M2M100-based transliteration models, applying PEFT/LoRA, knowledge distillation, and quantization to achieve low-latency inference. Optimized models for mobile and edge deployment using TensorFlow Lite, ensuring robustness, scalability, and sub-100ms performance in production environments.

Machine Vision and Intelligent Systems Lab

01-Jun-2025 - 20-Aug-2025

Engineered continual learning pipelines using Avalanche to support incremental, non-stationary training regimes on high-dimensional biomedical and spectral datasets. Designed unified, cross-species architectures to replace legacy single-species models, emphasizing domain generalization, distribution shift robustness, and zero-/few-shot transfer. Implemented custom hybrid CNN-Transformer backbones and bespoke training loops in PyTorch, optimizing representation learning across heterogeneous modalities. Integrated model interpretability and calibrated uncertainty estimation, leveraging Grad-CAM, SHAP, Bayesian layers, and posterior predictive analysis to ensure reliable and explainable inference in safety-critical settings.

FINAL YEAR PROJECT

Pathoshield

PATHOSHIELD is an AI-driven antimicrobial stewardship and surveillance system that predicts antimicrobial resistance (AMR) from MALDI-TOF mass spectrometry data. It replaces traditional rule-based diagnostics with deep learning models—both species-specific and cross-species—that generalize across hospitals, bacterial species, and evolving resistance patterns. The system uses hybrid CNN and CNN-Transformer architectures in PyTorch, employs continual learning to handle real-world non-stationarity, and integrates explainability (Grad-CAM, SHAP) and Bayesian uncertainty estimation for interpretable, trustworthy predictions. PATHOSHIELD enables real-time AMR surveillance, uncertainty-aware decision support, and electronic prescription integration, making it a scalable, deployable tool for modern microbiology labs and public health systems.

TECHNICAL EXPERTISE

Machine Learning & Deep Learning

Design, implement, and optimize deep learning models using TensorFlow, PyTorch, and Keras. Skilled in convolutional neural networks, transformers, neural architecture search, transfer learning, and ensemble methods for computer vision, NLP, and biomedical applications. Experienced in model evaluation, hyperpa ...

Computer Vision & Image Processing

Expertise in developing vision pipelines for classification, detection, OCR, and anomaly detection. Implement multi-frame motion analysis, texture analysis, GAN-based image generation, and preprocessing pipelines for medical, security, and document-based applications.

Natural Language Processing & Transliteration

Fine-tune transformer-based models (M2M100, LLaMA3) for transliteration, text generation, and retrieval-augmented tasks. Build end-to-end NLP pipelines including data scraping, alignment, knowledge distillation, and BLEU-based performance optimization.

Software Architecture & Backend Development

Design scalable backend systems using Flask, FASTAPI, Express.js, and Laravel. Implement microservices, REST APIs, authentication mechanisms, load balancing, caching layers, and containerized deployment using Docker/Kubernetes.

Data Engineering & Databases

Design, optimize, and maintain relational and NoSQL databases (MySQL, MongoDB). Implement efficient schemas, indexing, query optimization, caching strategies (Redis), and audit logging for high-performance applications.

Systems Programming & Network Development

Proficient in C++17 and multithreaded programming. Build concurrent and distributed systems with custom TCP/UDP protocols, socket programming, load balancing, fault tolerance, and high-performance file transfer systems.

DevOps & Cloud Infrastructure

Manage CI/CD pipelines, containerized deployments with Docker/Kubernetes, version control with Git, and cloud-based services. Ensure scalable, reliable, and maintainable production environments.

Explainable AI & Model Uncertainty

Apply Grad-CAM, SHAP, and Bayesian approaches to create interpretable models. Enable trustable predictions in clinical, financial, and security-critical applications.

Data Science & Analytical Modeling

Implement statistical learning, ensemble models (Random Forest, XGBoost, Ridge Regression), time-series forecasting, feature engineering, sentiment analysis, and backtesting frameworks for predictive analytics.

High-Performance & Optimized Computing

Optimize computation-intensive tasks using GPU acceleration (CUDA, CuPy), multithreading, and adaptive resource management. Improve model inference times and system throughput for real-time applications.



Hussein Ahmad

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PROFESSIONAL PROFILE

Computer Science undergraduate student at NUST with hands-on experience in machine learning and deep learning through industry internships. Strong background in model training, research comparison, and applied AI projects, including intrusion detection, price prediction, and computer vision tasks. Proficient in Python, Java, and core ML/DL concepts, with a solid academic record and research-oriented final-year project in sign language recognition.

EDUCATION

Bachelor of Science in Computer Science

School of Electrical Engineering & Computer Science, Islamabad, 3.49 (2026)

INTERNSHIP EXPERIENCE

National Center of Artificial Intelligence

07-Jul-2023 - 05-Aug-2023

- Learnt about AI and Machine Learning Models. - Learnt about the inner working of Machine Learning Models, and applied them. - Compared research papers regarding ML performance in Intrusion Detection.

ZAYTRICS

09-Jul-2024 - 09-Sep-2024

- Deployed AI models on Cryptocurrency prices. - Created a trading bot to predict prices.

FINAL YEAR PROJECT

Signify: An intelligent interface for real-time Sign Language recognition

This project proposes a real-time, two-way communication application that leverages a virtual avatar in order to facilitate communication between abled and differently-abled persons. It is designed to be accessible and easy to use, and does not rely on extraneous hardware such as specialized sign language gloves, and instead uses computer vision based techniques. This approach ensures affordability and widespread usability of the system, while simultaneously providing an engaging and intuitive medium for communication via an avatar driven interface. This system moreover aims to be highly responsive and have minimal setup requirements.

TECHNICAL EXPERTISE

Python

I have experience coding in the Python programming language.

Java

I have experience coding in the Java programming language.

PyTorch and Tensorflow

I have experience doing machine learning and deep learning through the PyTorch and Tensorflow libraries.

Colab

I have experience with the use of the platform of Colab when undertaking machine learning, deep learning and reinforcement

learning.



Rehan Haider

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PROFESSIONAL PROFILE

Please update objective section.

EDUCATION

BSCS

SEECs, Islamabad, 2.76 (2026)

INTERNSHIP EXPERIENCE

Impulxor

01-Jun-2024 - 31-Jul-2024

Full Stack Web Development/MERN Development

NorenzTech

02-Jun-2025 - 28-Nov-2025

Full Stack Engineer

FINAL YEAR PROJECT

iWAF

A Hybrid Web Application Firewall that combines both Signature Based Firewall & AI-ML Based Intelligent Firewall

TECHNICAL EXPERTISE



Muhammad Talha Mushtaq

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PROFESSIONAL PROFILE

I'm a Web Developer with a strong DevOps-oriented mindset, focused on building modern, scalable, and production-ready web applications. I work primarily with JavaScript and TypeScript, using React to craft clean, responsive, and high-performance user interfaces, backed by solid backend integrations using Node.js, MongoDB, and Firebase. Beyond development, I have hands-on experience with Docker, Linux environments, and CI/CD pipelines using GitHub Actions, allowing me to take projects from development to deployment with confidence. I enjoy solving real-world problems, improving developer workflows through automation, and continuously learning new technologies to build reliable systems that scale.

EDUCATION

BSCS

SEECs, ISLAMABAD, 2.45 (2026)

INTERNSHIP EXPERIENCE

SiberKoza - NASTP

22-Jun-2025 - 22-Aug-2025

Developed a comprehensive realtor inventory and client management system designed to streamline property assignments and inventory tracking for real estate professionals. Spearheaded the migration of the frontend from JavaScript to TypeScript to enhance code reliability while containerizing the application using Docker for consistent deployment. I actively improved backend API testing pipelines and managed onsite development workflows through GitHub Project Management, facilitating clear team communication and efficient ticket resolution in a fast-paced environment.

FINAL YEAR PROJECT

Ustaad

Ustaad is a web-based freelance training platform designed to help beginners bridge the gap between learning technical skills and securing their first freelance client. The system provides structured learning paths, milestone-based project submissions, and progress tracking, supported by AI-driven feedback to guide users toward industry-relevant standards. By focusing on hands-on practice, portfolio building, and simulated freelance experiences, Ustaad aims to create a practical, outcome-oriented learning environment that prepares users for real-world freelancing, particularly in developing regions.

TECHNICAL EXPERTISE

Git

I use Git extensively for version control, managing branches, tracking changes, and collaborating effectively in team-based development environments.

Github

I actively work with GitHub to host repositories, manage pull requests, handle issues, and maintain clean and organized project workflows.

Vercel

I can deploy applications using Vercel, taking advantage of its seamless integration with Next.js, serverless functions, and optimized production builds.

Github Actions

I have hands-on experience with GitHub Actions, where I design CI/CD pipelines to automate testing, building, and deployment processes.

AWS

I work with AWS to deploy and scale applications, manage cloud infrastructure, and utilize cloud services for backend and storage solutions.

Web Dev

I specialize in web development using the MERN stack with TypeScript, building full-stack applications that are scalable, type-safe, and maintainable.

Firebase

At an intermediate level, I use Firebase for authentication, real-time databases, cloud functions, and rapid backend development.



Muhammad Moiz Masood

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PROFESSIONAL PROFILE

I am a Computer Science undergraduate graduating in 2026, with core strengths in machine learning, deep learning, large language models, and computer vision. My expertise includes building end to end RAG pipelines, self hosting and deploying LLMs, and developing deep learning based solutions for image segmentation and classification in MRI imaging. I also have strong experience in agentic AI, having built automated outreach systems capable of handling volumes of 1,000+ emails per day. This is complemented by a solid foundation in MLOps and core computer science fundamentals, supported by both research and industry exposure.

I have worked as a Research Assistant under the mentorship of Dr. Faisal Shafait at the TUKL Deep Learning Lab, NUST, as well as in industry roles as a machine learning and automation intern, which has given me a balanced perspective on research-driven development and production oriented systems.

I am able to work independently with minimal supervision and consistently deliver against tight deadlines. My freelance experience has strengthened my ability to manage both technical and non technical communication with diverse stakeholders. I work effectively in team environments, understand group dynamics, and can identify and leverage individual strengths to contribute toward shared objectives.

I have consistently maintained high academic performance with merit-based recognition, and my long term objective is to translate research driven deep learning paradigms into impactful industry applications, particularly within healthcare AI.

EDUCATION

BS-CS

SEECS , Islamabad , 3.61 (2026)

INTERNSHIP EXPERIENCE

Modern Intelligent Solutions

08-Jul-2025 - 08-Sep-2025

I worked as an Automation Engineer, where I built AI driven workflow automations and scalable outreach systems that significantly reduced manual effort and improved operational efficiency. I worked on cold emailing, cold calling workflows capable of sending 1000+ mails a day. I also had to maintain code repositories regarding these workflows which allowed me to have a hands on experience on how modular, clean is written and maintained

TUKL-DLL Nust

04-Jun-2025 - 30-May-2026

I am currently a Research Assistant at the TUKL Deep Learning Lab at NUST, where I work under the mentorship of Dr. Faisal on applied research in cardiovascular MRI for high-field (3T) cardiac CINE imaging. My research focuses on developing deep learning based methods to reduce frequency offset and banding artifacts, with the goal of improving diagnostic reliability.

ONT Lab Nust

01-Jul-2024 - 01-Sep-2024

Research intern in ONT Lab NUST where I worked on datasets involving time-series modeling with RNNs, CNNs, transformers, attention mechanisms, and GAN based data augmentation, which strengthened my foundation across a wide range of deep learning paradigms.

FINAL YEAR PROJECT

Frequency Offset Detection in Cardiovascular MRI Images in 3.0 Tesla

Cardiovascular MRI images are produced at a specific frequency. Different frequencies result in different image quality which is often corrupted by banding artifacts, signal loss and breathing motion. These image corruptions vary from patient to patient. A frequency on patient A might not be optimal for patient B. So an operator has to manually review a set of images obtained at different frequencies and find the best image. This process is time taking, subject to inter operator observability and a cause to patient discomfort. Our objective is to completely automate this process. The proposed end to end pipeline involves segmenting the images to get the the region of interest (ROI) using deep learning segmentation models and then create a custom architecture to find the best image and its corresponding frequency. This project has led to use various core deep learning libraries, such as pytorch, MONAI and exposure to solving problems independently , performing literature review and building and maintaining end to end libraries

TECHNICAL EXPERTISE

Machine Learning Engineer

Core Computer Science: -Data Structures & Algorithms -Problem-solving and debugging Programming & Software Engineering - Languages -Coding practices -Version control and testing -Machine Learning & AI -Frameworks -Model types -End-to-end ML workflows -Computer Vision / Domain Expertise -Specializ ...



Hira Sardar

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PROFESSIONAL PROFILE

Applied **AI and Machine Learning practitioner** with hands-on experience in computer vision, video analytics, and deep learning systems. Skilled in building and benchmarking **scalable AI pipelines** on real-world datasets, with a strong focus on translating research into production-ready solutions.

EDUCATION

Bachelor of Science in Computer Science (BSCS)

NUST School of Electrical Engineering and Computer Science, Islamabad, 3.77/4.0 (2026)

INTERNSHIP EXPERIENCE

VisionRD

01-Dec-2025 - 24-Jan-2026

Worked on large-scale egocentric video datasets for Factory Copilot use cases, applying and benchmarking state-of-the-art AI models including BAFormer, SAM2, and V-JEPA for video understanding and representation learning. Designed and evaluated task-specific pipelines for industrial scenarios, enabling reliable video-based analysis across multiple factory workflows.

Zhejiang University

30-Jul-2025 - 31-Aug-2025

Conducted experimental analysis of state-of-the-art video watermarking techniques on biometric video datasets, evaluating their impact on rPPG-based heart rate estimation. Designed and benchmarked robust pipelines to assess signal degradation and improve model reliability under real-world video transformations.

TUKL-NUST Deep Learning Lab & National Centre of Artificial Intelligence (NCAI)

01-Jun-2023 - 31-Jan-2025

Worked on two applied deep learning projects: Interactive Brain Education via Augmented Reality and Plant Disease Diagnosis via Co-Salient Object Detection. Designed high-fidelity 3D brain models and interactive visualizations using Blender, integrating deep learning and computer vision concepts to support AR-based neuroeducation and evaluating feasibility for real-world deployment. Implemented and benchmarked multiple co-salient object detection models on custom agricultural datasets to localize disease-affected regions in plant imagery.

Optical Networks and Technologies (ONT) Lab

01-Jun-2024 - 30-Sep-2024

Built and optimized machine learning pipelines for signal quality prediction using large-scale tabular network performance data. Applied and compared advanced techniques including active learning, knowledge distillation, federated learning, and explainable AI to improve model performance and reliability in real-world network scenarios.

Pakistan Science Foundation - Science Talent Farming Scheme (STFS)

01-Jan-2021 - 31-Dec-2022

Selected for a highly competitive national research program under the Science Talent Farming Scheme (STFS), where I conducted a mentored project titled "Investigation of Cubic B-Spline Scheme for Modeling of Curves," applying mathematical modeling and data analysis techniques. Gained hands-on experience in structured problem-solving, experimental design, and analytical thinking through inquiry-based research training.

FINAL YEAR PROJECT

Inverse EEG-Based 3D Brain Mapping for Early Neurological Disease Detection

Developed an end-to-end AI-driven system for inverse EEG-based 3D brain mapping to support early detection of neurological diseases. Designed deep learning and physics-informed pipelines to solve the EEG inverse problem, reconstructing high-resolution 3D brain activity maps from scalp EEG signals. Benchmarked classical inverse solvers against CNN-based approaches, optimized hybrid pipelines, and integrated explainable AI (XAI) techniques to provide interpretable visualizations for clinicians and researchers. The system supports disease biomarker analysis and interactive 3D visualization, bridging raw EEG data with clinically meaningful insights.

TECHNICAL EXPERTISE

Languages and Libraries

Python, C++, Java, SQL, HTML, CSS, JavaScript, PHP, LaTeX, C#, C, PyTorch, TensorFlow, Keras, OpenCV, NLTK, TensorFlow, Numpy, Pandas, Matplotlib, Seaborn, XGBoost, Scikit-Learn.

Tools and Frameworks

GitHub, Colab, Jupyter, VS Code, Microsoft Office Suite, Overleaf, Blender, Media Pipe.

Operating Systems

Windows, Linux.



Hamza Riaz

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PROFESSIONAL PROFILE

I am a final-year Computer Science student with research experience in NLP and multimodal machine learning. My primary interest lies in Generative AI, with a focus on LLM-based systems. I have built end-to-end pipelines that combine prompt design, retrieval-augmented generation, and structured evaluation, and I am comfortable taking a system from an initial prototype to reproducible results. Additionally, I have certifications of Machine Learning and Deep Learning Specializations from Coursera. I have also taken all AI-focused electives throughout my degree. This has given me a strong theoretical and practical foundation to work on SOTA problems in this domain. Beyond model development, I can also build full stack applications to deploy and showcase these systems outside a notebook setting. I am looking to continue this work in professional research and development environments as well.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science (SEECs), Islamabad, 3.62/4.0 (2022)

INTERNSHIP EXPERIENCE

Research Intern, TUKL-NUST R&D Center (NUST x Technical University of Kaiserslautern collaboration)

03-Jun-2024 - 18-Aug-2025

- Co-developed a multimodal deep learning triage system to classify patients by the Korean Triage Acuity Scale (KTAS) using both structured signals and unstructured clinical text.
- Benchmarked multiple model families (RCNN, ACNN, BERT variants) and found that smaller language models performed better than larger ones for this setting.
- Tested LLM-based few-shot imputation to predict missing pain scores from context, reaching performance comparable to supervised approaches.
- Reframed acuity prediction as an ordinal classification task and reported quadratic weighted kappa (QWK) alongside accuracy and macro-F1 for more meaningful evaluation.
- Built a cross-modality feature fusion module and achieved 78% validation accuracy and 0.76 macro-F1, with SHAP-based explanations to verify clinically sensible feature importance.

FINAL YEAR PROJECT

XMedFusion: Agentic Cross-Modality Radiology Report Generation

- Building a modular, agent-based pipeline for radiology report generation that separates vision understanding, knowledge grounding, retrieval, drafting, and refinement into clear components to output a precise and clinically accurate X-ray/CT scan report.
- Implementing structured intermediate representations, in the form of knowledge graphs, to make generation more controllable and easier to validate than end-to-end free-form generation.
- Designing retrieval-augmented workflows to pull k-most similar reports for achieving stylistic consistency, and to reduce unsupported or inconsistent statements.
- Developing robust evaluation utilities that check output validity and measure both structure quality and end-task quality using various metrics from recent literature.
- Creating a full stack demo to showcase the system, including a fully functional backend API and a deployed web interface for interactive testing.

TECHNICAL EXPERTISE

Programming Languages

Python, C/C++, SQL. Strong fundamentals in data structures, algorithms, and writing clean, modular code.

Deep Learning Frameworks

PyTorch, TensorFlow. Model training, fine-tuning, custom modules, debugging training issues, and performance tuning.

Generative AI Tools and Techniques

Hugging Face Transformers, tokenization, and dataset pipelines, along with prompt design, supervised fine-tuning, retrieval-augmented generation (RAG), structured outputs (JSON), guardrails, and reliability-focused evaluation for LLM-based systems.

Data Analysis and Model Evaluation

Pandas, NumPy. Data cleaning, feature engineering, dataset preparation, and exploratory analysis, along with metrics-driven evaluation, error analysis, ablations, and scripting to validate outputs and compare baselines.

Backend, Deployment, and Developer Tools

FastAPI and REST APIs for serving models and building demos beyond notebooks, plus Git, Linux, and Jupyter for version control, CLI workflows, and reproducible, well-structured projects.



Hammad Ali

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PROFESSIONAL PROFILE

Research-driven Computer Science undergraduate at NUST (SEecs) with dual expertise in **AI-enabled Network Security** and **Full Stack Web Development**. Currently a Research Assistant for the **NATO SPS Program**, contributing to sustainable 6G networks via Federated Learning and Edge Intelligence. Simultaneously possesses professional software engineering experience building scalable MERN stack applications for commercial clients like Silicon Glen Embedded Systems. Selected for the prestigious **MITACS Globalink Research Internship 2026**, demonstrating a proven trajectory in both high-level academic innovation and practical software delivery.

Key Research Experience

- **Research Areas:** 6G Wireless Networks, Federated Learning (FL), Network Security, and Cryptography.
- **Role:** Research Assistant for the NATO SPS Program (Secure-ISAC) and IPT Lab.
- **Key Contributions:**
 - Developing energy-efficient frameworks using **Federated Distillation** and **Over-the-Air Aggregation (UFDA)**.
 - Designed an intelligent network monitoring system for real-time encrypted traffic analysis (MITMPROXY).
 - Worked on State-of-the-Art DDoS Dataset Generation and Deep Learning-based threat detection.
- **Publications (Under Review):**
 - *"Efficient Edge Intelligence: Federated Distillation and Pruning with Over-the-Air Aggregation"* (Computer Communications).
 - *"Energy-Aware Federated Distillation Framework for Sustainable Net-Zero 6G Wireless Networks"* (IEEE Communications Magazine).

Key Web Development Highlights

- **Tech Stack:** React.js, Node.js, Express.js, MongoDB, HTML/CSS.
- **Experience:** Full Stack Developer at **Silicon Glen Embedded Systems (SGES)** and **Digital To Design**.
- **Projects:** Developed Hospital Management Systems, Hotel Booking Systems, and custom property management solutions.

EDUCATION

BSCS

SEecs, Islamabad, 3.14 (2022)

INTERNSHIP EXPERIENCE

NATO Research Assistant (Research)

01-Oct-2025 - 22-Jan-2026

Conducting research on Green AI and Federated Learning for sustainable 6G networks. Developed an energy-efficient "Federated

Distillation and Pruning" framework to optimize Edge Intelligence. Co-authored two research papers (under review).

Silicon Glen Embedded Systems (SGES)

01-Mar-2024 - 31-May-2024

Spearheaded the end-to-end development of a dynamic, responsive website tailored to meet the specific industry needs of Silicon Glen Embedded Systems, a leading UK-based company. Built the entire website from scratch using the MERN stack (MongoDB, Express.js, React.js, Node.js) for robust and scalable functionality. Leveraged Tailwind CSS to create a modern, user-friendly, and visually appealing interface, ensuring seamless responsiveness across devices. Collaborated closely with stakeholders to understand business requirements and deliver a solution that aligned with their goals. Optimized website performance, ensuring fast load times and a smooth user experience. Key Achievement: Successfully delivered a high-quality website that enhanced the company's online presence and effectively addressed industry-specific challenges.

Ministry of Professional and Technical Training

01-Jun-2024 - 30-Jun-2024

Fueled by a passion for practical education, I contributed to the Ministry of Federal Education and Professional Training's (MOFE & PT) Summer Fiesta 2024 initiative through the esteemed Professional Development Center (PDC) at NUST. This exciting opportunity allowed me to design and lead a program introducing participants to the world of programming and development. Collaborating with industry professionals, I crafted a comprehensive course outline and curriculum, ensuring the program ignited a passion for practical skills within participants.

Digital to design

01-Jul-2024 - 31-May-2025

Front-End Development: Crafting responsive and dynamic user interfaces using modern frameworks like React.js. Back-End Development: Building robust and scalable server-side applications using Node.js. Database Management: Designing and optimizing databases using MongoDB or MySQL. API Development & Integration: Creating RESTful APIs and integrating third-party services. Performance Optimization: Ensuring applications are fast, secure, and scalable. Collaboration & Problem-Solving: Working closely with cross-functional teams to deliver high-quality digital solutions.

Power planning and management company (PPMC)

01-Jul-2025 - 01-Sep-2025

Worked as an R&D Intern building "Power Post," an AI-driven platform for energy sector analysis. Engineered advanced web scraping pipelines to aggregate power data and developed Machine Learning algorithms specifically for solar potential mapping. Assisted in data-driven decision-making processes for the National Electricity Plan.

Information processing and transmission lab (IPT)

01-Jun-2025 - 01-Sep-2025

Worked as an R&D Intern building "Power Post," an AI-driven platform for energy sector analysis. Engineered advanced web scraping pipelines to aggregate power data and developed Machine Learning algorithms specifically for solar potential mapping. Assisted in data-driven decision-making processes for the National Electricity Plan.

FINAL YEAR PROJECT

Development of a DDoS Network Traffic Dataset for Deep Learning-Based Prediction and Prevention of Attacks

Distributed Denial of Service (DDoS) attacks continue to be a major cybersecurity threat, disrupting services and overwhelming networks with malicious traffic. While deep learning has shown promise in detecting such attacks, their effectiveness heavily depends on the availability of high-quality, labeled datasets. Currently, most publicly available datasets either lack recent DDoS attack patterns, or do not provide enough variability in attack types to support the training of robust predictive models. In contrast, there is ample availability of normal network traffic datasets, which are insufficient on their own for developing accurate DDoS detection systems. This project addresses the critical gap by conducting a thorough analysis of existing DDoS datasets to highlight their limitations and then developing a new dataset that includes diverse DDoS attack traffic and corresponding normal traffic. The dataset will be used to train and evaluate deep learning models capable of accurately detecting and predicting DDoS attacks. The goal is to enhance the reliability and early detection capabilities of intrusion detection systems.

TECHNICAL EXPERTISE

Skills Summary

Programming Languages: Python, C/C++, Java, JavaScript (ES6+), SQL, HTML5/CSS3. Frameworks & Libraries: PyTorch, TensorFlow, Keras, NumPy, Pandas, Matplotlib, React.js, Node.js, Express.js, Tailwind CSS. Domain Expertise: Federated Learning, Green AI, Edge Computing, 6G Wireless Networks, Network Securi ...



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PROFESSIONAL PROFILE

Software Engineer with strong experience across **Full-Stack Development** and **AI/ML** systems. Skilled in building scalable web applications using Next.js, React, TypeScript, MERN stack, and FastAPI, alongside developing AI solutions involving computer vision, NLP, LLMs, and Retrieval-Augmented Generation systems. Experienced in research-driven environments, automation pipelines, and real-world AI deployments. Adept at translating complex requirements into reliable, production-ready solutions with a focus on performance, usability, and maintainability.

Skills:

- AI/ML:** LangGraph, LangChain, TensorFlow, PyTorch, Prompt Engineering, Pandas, NumPy, Matplotlib, Seaborn, OpenCV, FastAPI
- Development:** NextJS, ReactJS, JavaScript, TypeScript, Supabase, Node.js, ExpressJS, Tailwind, Bootstrap, CSS, HTML
- Databases:** MongoDB, MySQL, PostgreSQL, VectorDB
- Version Control and Languages:** Git, GitHub, Docker, DVC, MLflow, CI/CD Basics, C, C++, Java, Python

EDUCATION

Bachelor of Science in Computer Science

SEECs, National University of Sciences and Technology (NUST), Islamabad, 3.18 (2026)

INTERNSHIP EXPERIENCE

Soft Pyramid (AI Development Intern)

10-Jun-2024 - 03-Sep-2024

Trained Llama3 on company policies using OpenWebUI, enabling HR to retrieve information efficiently through natural language interaction. Work on automating employee attendance system by integrating Llama3, allowing seamless leave requests and attendance tracking. Implemented Retrieval-Augmented Generation (RAG) using LangChain for accurate document-based question answering.

SimpleTalk.AI (AI Automation and Prompt Specialist)

16-Jun-2025 - 03-Oct-2025

Designed and optimized prompts for multi-channel AI agents, including voice, chat, SMS, and email, to enhance accuracy and user engagement. Developed and tested LLM-driven conversational workflows, ensuring consistent, context-aware interactions across platforms. Built automation pipelines using GHL to streamline business operations.

CODSOFT (Web Development Intern)

01-Aug-2023 - 30-Sep-2023

Developed and maintained core features of an e-commerce platform using the MERN stack. Built secure user account, product management, and order processing modules to enhance customer experience. Implemented an admin dashboard for efficient product and order management.

Machine Vision & Intelligent Systems Lab

01-Dec-2024 - 30-Apr-2025

Developed deep learning models for Land Use Land Cover (LULC) classification and crop mapping using remote sensing imagery and hybrid LSTM architectures for temporal data analysis. Evaluated model performance across temporal and regional domains to assess generalization and transferability.

FINAL YEAR PROJECT

GlacioVision: Modeling Glacier Retreat and Water Security in Pakistan Through Remote Sensing Technologies

Designed and implemented a production-style glacier monitoring system leveraging satellite imagery and climate datasets. Engineered CNN-based spatial feature extractors with transformer-based temporal modeling to predict future glacier masks and elevation changes. Developed data pipelines for preprocessing, inference, and evaluation, and built an interactive visualization dashboard to visualize historical trends, model predictions, spatiotemporal changes, and track glacier area and volume changes over time, enabling scalable analysis and decision support for climate research.

TECHNICAL EXPERTISE

LawBot (Legal Assistant Chatbot for Pakistan Penal Code)

Built an AI legal assistant using an RAG pipeline with LangChain, FAISS, HuggingFace embeddings, and a locally hosted DeepSeek model for PPC retrieval. Developed a Streamlit app with local inference and Perplexity MCP web search. Implemented a custom MCP server enabling external agents like Claude to quer ...

NUST International Model United Nations: (NIMUN'25)

Built an event registration and management system Model United Nations conference using Next.js and TypeScript for 700+ participants. Integrated APIs for live data updates, image storage, and automated notifications.

Road Scene Semantic Segmentation

Implemented a MobileNetV2-based DeepLabV3+ model with enhanced ASPP and SKFusion attention mechanism for urban road scene understanding using the Cityscapes dataset. Applied data augmentation and class-weighted loss to improve pixel accuracy and (mIoU). Developed a MLOPs pipeline for efficient model trainin ...

Gender Detection using Handwriting

Built a handwriting-based gender classification model using feature-based and image-based approaches, optimizing 7,000+ extracted features for better interpretability and efficiency. Applied Random Forest, SVM, and XGBoost, fine-tuning hyperparameters and leveraging CNN, ResNet, and EfficientNet for deep fea ...

Community Service Web App

Developed a full-stack platform (React, Node.js, MySQL) for fundraising and community drives. Account Management: User can register, login, recover account using forget password and view profile. Fundraising Campaigns: User can start campaign, donate for existing campaign and track campaigns. Community Dri ...

Lyrics Vista (National Anthem Analysis)

Developed a Python Tkinter application to compare national anthems and generate new lyrics. Applied NLP techniques (TF-IDF) and K-Means clustering to identify patterns in anthem texts. Visualized results with word clouds, silhouette analysis, and plots using Matplotlib, and Seaborn. Built end-to-end pipeli ...

POS (Point of Sale) Service System:

Developed a full-stack application utilizing modern web technologies for transaction management, inventory tracking, and sales reporting with real-time data synchronization. Implemented responsive interface and RESTful backend services to handle concurrent user requests, demonstrating proficiency in developme ...



Abdulrehman

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PROFESSIONAL PROFILE

Final-year BS Computer Science student at NUST with hands-on experience in full-stack web development. Completed industry internships, working with React, Next.js, Node.js and PostgreSQL. Strong problem-solving mindset with a focus on building scalable, real-world software solutions.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science, NUST, Islamabad, 2.90 (2026)

INTERNSHIP EXPERIENCE

Quantino Tech

10-Jun-2025 - 09-Aug-2025

Worked as part of the Web Development team on production-level projects. Built and maintained web applications using Next.js, React, and Node.js. Implemented backend services and APIs with Supabase and PostgreSQL. Collaborated with team members using Git-based workflows. Gained hands-on experience with modern full-stack development practices.

FINAL YEAR PROJECT

CardioTuneAI – AI-Based Optimization of Cardiac Cine MRI

Designed a deep-learning system to predict the optimal frequency offset for cardiac cine MRI (3T) to reduce bSSFP banding artifacts. Processed DICOM scout images, trained and evaluated neural networks, and validated improvements in image quality. Focused on practical deployment for clinical MRI workflows. Technologies Used: Python, Deep Learning, TensorFlow/PyTorch, DICOM, Medical Image Processing

TECHNICAL EXPERTISE

Web Development

JavaScript, React, Next.js, Node.js, Supabase, REST APIs, PostgreSQL, Git

Mobile App Development

Flutter, Dart, Cross-Platform Mobile Development, State Management, API Integration, Firebase

Machine Learning & Artificial Intelligence

Python, Deep Learning, Neural Networks, Medical Image Analysis, Model Training & Evaluation



Maha Baig

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PROFESSIONAL PROFILE

Computer Science undergraduate at NUST with strong research and applied experience in Artificial Intelligence, Vision-Language Models, and explainable AI. Experienced in building agentic AI systems, Retrieval-Augmented Generation pipelines, and ML-driven healthcare and education applications. Adept at translating complex AI outputs into interpretable, user-centered systems through interdisciplinary work spanning machine learning, software engineering, and product design. Seeking research or industry roles where rigorous AI development, interpretability, and real-world impact intersect.

EDUCATION

Bachelor of Science in Computer Science

School Of Electrical Engineering And Computer Science, Islamabad, 3.33/4.0 (2022)

INTERNSHIP EXPERIENCE

Deep Learning Lab, NUST

08-Mar-2025 - 09-May-2025

Designed a secure smart-attendance system integrating post-quantum cryptographic schemes for IoT-enabled classrooms. Analyzed performance trade-offs and security resilience against classical and quantum adversaries. Demonstrated applicability to healthcare and education environments requiring tamper-proof monitoring.

SMART Labs, NUST

03-Sep-2025 - 01-Nov-2025

Conducted research on interpretability and grounding in Retrieval-Augmented Generation systems. Co-authored a survey on explainability, attribution, and verification in generative AI. Contributed across the full research pipeline, including literature review, experimentation, analysis, and manuscript preparation.

Machine Vision & Intelligent Systems Lab, NUST

14-Nov-2025 - 22-Jan-2026

Developed an agentic medical AI pipeline using Vision-Language Models to generate interpretable, evidence-grounded diagnostic reports from medical images. Designed a clinical Knowledge Graph to encode hierarchical and spatial findings for traceable reasoning. Introduced an Evidence Gate to verify diagnostic claims against image-derived evidence, reducing hallucinations. Evaluated the system on public X-ray and CT datasets, improving factual consistency and interpretability.

Carbonteq, Lahore

22-Jun-2025 - 08-Aug-2026

Worked in a cross-functional software engineering team on production-grade applications. Designed high-fidelity UI/UX assets using Figma and Adobe XD. Contributed reusable frontend components in React while maintaining design system consistency.

FINAL YEAR PROJECT

XMedAgent: An Agentic AI Framework for Knowledge-Guided Radiology Report Generation

Developed an agentic radiology reporting system using Vision Agents, Retrieval Agents, and multi-LLM orchestration. Integrated a clinical Knowledge Graph and an Evidence Gate to ensure image-grounded, verifiable diagnostic statements. Focused on interpretability, factual consistency, and safety-critical deployment in medical AI settings.

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Design and implementation of machine learning systems with emphasis on interpretability, grounding, and real-world deployment. Experience with Vision-Language Models, Retrieval-Augmented Generation, agentic AI pipelines, and evidence-based reasoning in healthcare and education domains.

Deep Learning & Model Development

Hands-on experience training and evaluating deep learning models using PyTorch and TensorFlow. Applied CNNs, multimodal architectures, and representation learning techniques for vision, speech, and language tasks.

Retrieval-Augmented Generation (RAG) Systems

Design of RAG pipelines incorporating vector databases and retrieval verification to improve factual consistency. Experience with curriculum-aligned content generation, adaptive difficulty modeling, and explainability in generative systems.

Software Engineering & Web Development

Frontend and backend development for AI-driven applications using React, Next.js, Flask, and RESTful APIs. Emphasis on modular design, reusability, and integration of ML outputs into production systems.

UI/UX Design for AI Systems

Design of user-centered interfaces for AI-powered web and mobile applications. Applied design thinking and user research to translate complex predictive analytics and ML outputs into intuitive user experiences.

Secure & Applied Systems

Experience designing secure systems integrating cryptographic techniques for authentication and data integrity. Evaluated system performance and security trade-offs in IoT-enabled environments.

Programming & Tooling

Proficient in Python, C++, Java, JavaScript, and SQL. Experienced with Git-based workflows, database systems, and collaborative development in research and industry settings.



Muhammad Tayyab Iftikhar

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PROFESSIONAL PROFILE

Computer Science undergraduate at NUST with a focus on Large Language Models and generative AI. Experienced in fine-tuning LLMs, building RAG pipelines, and developing scalable AI applications. Skilled in machine learning, deep learning, and full-stack application design, translating technical requirements into production-ready solutions. Seeking an AI/ML role to create LLM-driven and generative AI systems with real-world impact.

EDUCATION

BSCS

SEECs, Islamabad, 3.29 (4)

INTERNSHIP EXPERIENCE

ESCASA

09-Jun-2026 - 15-Aug-2026

Trained deep learning models for text-to-speech synthesis and image caption generation. Developed and evaluated model pipelines for accurate and robust outputs.

HPC NUST

04-Aug-2025 - 25-Jan-2026

Developed RAG pipelines and fine-tuned large language models, exploring Ollama and Hugging Face ecosystems, and currently working on the NUST AI help bot. Built an interactive system allowing students to query and explore models in real time.

Machvis NUST

04-Mar-2025 - 25-Jan-2026

Conducted exploratory data analysis on Lahore population and air pollution datasets, generating insights and visualizations. Later, worked on UAV imagery and machine learning to analyze wheat genotypes, preprocessing data and extracting structural, spectral, and texture features for phenological analysis.

FINAL YEAR PROJECT

Analyzing UAV based multispectral data for genotypic aware crop performance Assessment

Modern agriculture increasingly uses UAV-based multispectral imagery to monitor crop performance. However, current methods often treat entire fields as homogeneous crop populations, overlooking the underlying genotypic or varietal diversity present in experimental or breeding fields. Each plot in such fields typically hosts a specific genotype or variety, often replicated across spatial and temporal dimensions. Without accounting for these varietal differences, analysis of phenological stages, biomass estimation, fractional cover, and other morphological / physiological features lack granularity and cannot inform genotypic performance comparison or variety selection. This project aims to bridge the gap identified in the above problem statement by performing a detailed, genotypic-aware analysis of UAV-collected multispectral crop data across multiple seasons and crops (Sunflower and Wheat) to identify and quantify performance variability, cluster high-performing varieties, and provide trends & insights for plant breeders and agronomists through a well-designed dashboard / interface.

TECHNICAL EXPERTISE

Data Engineering & Feature Engineering

Processed, cleaned, and transformed datasets for machine learning and deep learning models. Worked with structured,

unstructured, and geospatial data, performing feature extraction and data preprocessing using Python, Pandas, NumPy, SQL, and remote sensing tools.

AI Tools, Full-Stack & Application Development

Integrated AI models into applications, managing ML pipelines, experiments, and interactive dashboards using Streamlit, MLflow, Weights & Biases, Git, GitHub, VS Code, PyCharm, and Jupyter Notebook. Designed and deployed web applications with MERN Stack (MongoDB, Express, React, Node.js), Django, Flask, Fast ...

Large Language Models & Generative AI

Fine-tuned large language models and implemented Retrieval-Augmented Generation (RAG) pipelines. Developed chatbots, question-answering systems, and AI agents with HuggingFace Transformers, LangChain, vector databases, embeddings, and prompt engineering for interactive and context-aware applications.

Machine Learning & Deep Learning

Built and trained machine learning and deep learning models for images, text, and time-series data. Worked on tasks like object detection, semantic segmentation, sequence modeling, and text-to-speech synthesis using Python, PyTorch, TensorFlow, NumPy, and Pandas. Conducted feature extraction, preprocessing, a ...



Muhammad Ahad Hassan Khan

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PROFESSIONAL PROFILE

I am a Computer Science undergraduate at NUST with strong research and applied experience in machine learning, computer vision, and LLM-based systems. My work spans end-to-end AI pipelines, including model design, dataset preparation, rigorous evaluation, and deployment, with applications in precision agriculture, real-time analytics, and policy-aware information systems. I have contributed to research projects involving multispectral vision, retrieval-augmented generation, and generative models, and I am particularly interested in developing reliable, interpretable, and scalable AI systems for real-world use. I aim to continue learning, enhance my technical skills, collaborate on impactful projects, and build robust, industry-ready AI systems, while also pursuing graduate studies to deepen my knowledge and expertise in artificial intelligence and computer science.

EDUCATION

Computer Science

SEECs , Islamabad , 3.57 (2026)

INTERNSHIP EXPERIENCE

SiberKoza - CENTAIC(CentreofArtificialIntelligenceandComputing)

23-Jun-2025 - 23-Aug-2025

Computer Vision & NLP Intern, Siber Koza — CENTAIC, NUST Gained hands-on experience across computer vision, generative AI, and NLP systems through applied research and prototyping. Worked with synthetic data generation using BlenderProc, explored diffusion models including Stable Diffusion with LoRA/DreamBooth fine-tuning, and designed an ALPR system for Pakistani license plates using YOLOv11 optimized with NVIDIA DeepStream for real-time analytics. Built retrieval-augmented generation (RAG) applications using LangChain and Streamlit for structured and unstructured data, and implemented stereo depth estimation using epipolar geometry on the KITTI dataset. Developed multi-agent LLM workflows using LangGraph and gained practical exposure to cloud-based AI pipelines on AWS.

SchoolofElectricalEngineering&ComputerScience - SEECs

20-Mar-2025 - 19-Jun-2025

Research Assistant (Computer Vision), Agri-Drone Project — SEECs, NUST Worked on an end-to-end agri-drone vision pipeline for crop localization and growth stage prediction using RGB and multispectral imagery. Modified the Ultralytics YOLOv11 framework to support 4-channel RGB+NDVI input and multi-task learning, enabling simultaneous crop detection and maturity estimation. Developed a UNet-based CNN to approximate NDVI from RGB drone images and validated it against multispectral ground truth. Led dataset annotation and preprocessing for 1,500+ drone images, including multispectral band alignment and expert-verified growth stage labeling. Deployed a real-time inference pipeline via a FastAPI service integrating NDVI estimation, detection, and visualization, optimized for efficient deployment.

OpticalNetworks&TechnologiesLab - NUST

10-Jun-2024 - 03-Sep-2024

Deep Learning Intern, Optical Networks and Technologies Lab — SEECs, NUST Conducted applied research in supervised and deep learning for optical network performance modeling. Developed GSNR prediction models using regression, tree-based methods, and neural networks, optimized through regularization, grid search, early stopping, and dropout. Applied transfer learning across geographically distinct datasets and leveraged active learning to reduce labeling costs. Implemented knowledge distillation for efficient model compression and explored federated learning for privacy-preserving training across distributed data sources. Employed explainable AI techniques (SHAP, LIME, PDP) to interpret model behavior and analyze feature importance, strengthening experimental rigor and evaluation practices.

FINAL YEAR PROJECT

Text-to-Document: A Generative Framework for Privacy-Preserving Document Image Synthesis

Developed a web-based framework that generates culturally authentic, hyper-realistic synthetic document images (e.g., invoices, contracts, forms) without using sensitive real-world data, addressing privacy concerns in AI training datasets. The system leverages multimodal large language models (MLLMs) for structured HTML and ground truth generation, combined with diffusion models to insert realistic visual elements such as handwriting, signatures, stamps, logos, barcodes, and photos. Features optional PII redaction using NER+OCR and verified annotations for downstream tasks like key information extraction and layout analysis. Built with a React frontend, Node.js backend, and FastAPI model-serving layer, the project emphasizes scalability, modularity, and compliance with GDPR/HIPAA. Collaborated with Hochschule RheinMain for GPU resources, with planned AWS migration. This work contributes to ethical AI by enabling high-quality, privacy-safe dataset augmentation for document understanding models.

TECHNICAL EXPERTISE

Machine Learning & Deep Learning

Supervised and deep learning with neural networks; experience in transfer learning, active learning, knowledge distillation, federated learning, and explainable AI (SHAP, LIME, PDP). Model optimization using regularization, early stopping, and systematic hyperparameter tuning.

Computer Vision

Object detection, localization, segmentation, and growth stage prediction using CNN-based models (YOLO, UNet, RCNN). Experience with multispectral imagery (RGB + NDVI), stereo vision and depth estimation, synthetic data generation, and dataset annotation using CVAT.

LLMs & Retrieval-Augmented Generation

Designed and evaluated RAG systems with hybrid retrieval (BM25 + dense embeddings + reranking), citation-grounded response generation, multi-agent workflows using LangGraph, and RAG evaluation with gold standards and ablation studies.

AI Systems, Deployment & Tooling

End-to-end AI pipeline development and deployment using FastAPI and Streamlit. Experience with AWS (EC2, S3, Lambda, RDS), Hugging Face Hub, NVIDIA DeepStream, reproducibility practices, and automated testing for ML/LLM systems.

Programming & Libraries

Proficient in Python with extensive use of PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, LangChain, and related ML tooling.



Malik Muhammad Aman

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PROFESSIONAL PROFILE

My work focuses on building production-oriented mobile and full-stack applications, with strong experience in Flutter and Android development, clean architectural patterns (MVVM), authentication workflows, API-driven user interfaces, and scalable backend services. Alongside application engineering, I design and integrate applied LLM systems, including retrieval-augmented generation (RAG) pipelines, prompt-controlled knowledge grounding, and end-to-end deployment of LLM-powered features such as educational chatbots. I am also developing privacy-preserving document processing pipelines, including document redaction modules and synthetic data workflows, with an emphasis on document understanding and data protection. My strengths include system-level thinking, clean software design, rapid learning, and the ability to translate research-oriented ideas into reliable, user-facing systems, complemented by clear communication, strong ownership, and effective collaboration in fast-moving technical environments.

EDUCATION

Bachelors of Computer Science

School of Electrical Engineering and Computer Science , Islamabad , 3.52 (2026)

INTERNSHIP EXPERIENCE

TruID

11-May-2024 - 11-Aug-2024

Developed production-oriented Android applications using clean architectural patterns and Android Jetpack components (ViewModel, LiveData, Navigation), with responsive UIs built in XML and Jetpack Compose. I worked extensively with Camera2 and CameraX APIs to implement advanced camera features, real-time on-device image processing, and motion analysis using optical flow. I also integrated and optimized machine learning models for mobile deployment using TensorFlow Lite, contributed to SDK optimization, and ensured app reliability through structured testing and debugging.

TruID - PartTimeJob

11-Aug-2024 - 11-Mar-2025

As a Junior Mobile Developer at TruID, I contributed to maintaining and enhancing the Signature Product Android application, focusing on performance, stability, and feature improvements. I implemented image processing pipelines, integrated CameraX for consistent camera functionality, and deployed on-device machine learning models. Additionally, I worked on converting fingerprint images to ISO-standard templates and briefly contributed to developing a Tenant Management System for NSTP, gaining experience in full-stack development and practical software solutions. I ensured code reliability and quality through systematic debugging, testing, and iterative improvements in a production environment.

FINAL YEAR PROJECT

Text to Document Generation, A Generative Framework for Privacy Preserving Document Image Synthesis

The scarcity of high-quality, shareable document datasets for AI training is a challenge due to slow manual anonymization and privacy issues. With privacy breaches averaging \$4.88M in 2024 and human-generated text for LLMs expected to diminish by 2026–2032, robust AI model development may be limited. The proposed solution is designed to generate structurally coherent, requirement-specific, and semantically aligned real-world documents combining LLMs and diffusion models, for Document AI. Text-to-Document revolutionizes AI training by generating hyper-realistic, privacy-safe documents with authentic handwriting and verified ground truths.

TECHNICAL EXPERTISE

Mobile Application Development

Designed and developed Android and cross-platform mobile applications using clean architectures (MVVM), Android Jetpack, Flutter, and Jetpack Compose, with API-driven UIs, authentication workflows, and production-focused testing and debugging.

Android Camera & Image Processing

Implemented advanced camera features using Camera2 and CameraX APIs, along with real-time on-device image processing, motion analysis, and image enhancement techniques optimized for mobile devices.

Applied Machine Learning on Mobile

Integrated and optimized machine learning models for on-device inference in Android applications using TensorFlow Lite, including image classification and object detection workflows.

LLM-Based Systems

Built and integrated retrieval-augmented generation (RAG) pipelines and LLM-powered features such as educational chatbots, focusing on controlled knowledge grounding and practical deployment.

Backend & Full-Stack Development

Developed RESTful backend services and full-stack systems with authentication, database integration, and client-server architectures to support mobile and web applications.

Document Processing & Privacy

Worked on document redaction pipelines and privacy-preserving document processing workflows, emphasizing data protection and secure handling of sensitive information.



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PROFESSIONAL PROFILE

Motivated Computer Science undergraduate with a strong focus on Deep Learning, Computer Vision, and Reinforcement Learning, and hands-on experience in research-driven projects. Skilled in designing and training neural networks for real-world applications, including AI-powered drone systems, wildfire detection, and autonomous control. Experienced with CNN architectures, transfer learning, edge deployment, and simulation-based experimentation. Demonstrated ability to work with complex mathematical models, optimize learning algorithms, and translate theory into practical implementations. Actively pursuing opportunities in AI research, intelligent systems, and applied machine learning.

EDUCATION

Bachelors of Science in Computer Science

SEECS , Islamabad , 3.57 (4)

INTERNSHIP EXPERIENCE

Payactic SDS, H-13, Islamabad

01-Jun-2023 - 31-Aug-2023

Optimized database performance and ensured integrity through backups and recoveries. Documented database processes, procedures, and best practices. Generated reports and visualizations for analysis and decision-making using Pandas and Matplotlib.

CSN Lab

01-Jun-2025 - 31-Aug-2025

Developed an AI-based wildfire detection pipeline optimized for deployment on edge devices (Jetson Nano). Worked with MODIS and VIIRS satellite datasets for wildfire monitoring. Applied TensorRT optimization to significantly improve model inference speed while maintaining competitive accuracy. Contributed to research output, including a co-authored paper on wildfire detection and segmentation.

FINAL YEAR PROJECT

AI-Powered Drone System for Early Wildfire Detection and Prevention

Wildfires pose a significant threat to ecosystems, wildlife, and human settlements, often leading to devastating economic and environmental consequences. In recent years, wildfires have significantly impacted ecosystems and communities worldwide, with 2024 witnessing extensive fires across various regions. For instance, the 2024 South American wildfires affected countries like Bolivia, Brazil, Chile, Colombia, Ecuador, and Peru, resulting in approximately 346,112 wildfire hotspots and damaging or destroying about 85,866,867 hectares of land. Additionally, the 2025 California wildfires, including the Palisades Fire and Eaton Fire, burned thousands of acres, displaced thousands of residents, and led to substantial financial losses. Traditional fire detection methods, such as satellite imaging and ground-based sensors, often suffer from delays, limited real-time monitoring, and inefficiencies in covering large, remote forested areas. These shortcomings allow fires to grow rapidly before intervention, leading to catastrophic consequences. With climate change intensifying fire hazards, rising global temperatures, and prolonged drought conditions, there is an urgent need for a proactive, AI-powered solution to detect and prevent wildfires before they escalate into large-scale disasters. This FYDP aims to develop an AI-powered drone system for early wildfire detection and prevention by integrating computer vision, thermal imaging, and environmental sensor data. Additionally, autonomous drone navigation using SLAM and GPS tracking will ensure efficient fire monitoring and surveillance in large forested areas. The project will also focus on onboard AI deployment on edge devices for real-time inference, optimizing processing speed and minimizing response time. A real-time alert system will be developed to send early warning notifications with GPS coordinates to firefighting agencies and disaster response teams. Furthermore, a web/mobile dashboard will be created for remote monitoring, providing a user-friendly interface for real-time fire visualization and

predictive analytics. Ultimately, this FYP seeks to enhance early wildfire detection, reduce response times, and mitigate fire-related damages through intelligent automation, real-time analytics, and autonomous drone deployment.

TECHNICAL EXPERTISE

Deep Learning & Neural Networks

Design, train, and evaluate deep neural networks for regression, classification, and segmentation tasks. Experienced with CNNs, autoencoders, RNNs, transfer learning, regularization, and hyperparameter optimization.

Computer Vision

Strong background in image processing and visual understanding, including feature extraction, clustering, object detection, and semantic segmentation. Applied computer vision techniques to real-world applications such as wildfire detection and autonomous drone perception.

Reinforcement Learning

Hands-on experience with reinforcement learning for control and decision-making problems. Familiar with policy-based and entropy-regularized algorithms (e.g., PPO, SAC), reward design, and training agents in simulated environments.

Large Language Models (LLMs) & Retrieval-Augmented Generation (RAG)

Experience working with large language models and building RAG pipelines for knowledge-grounded question answering. Familiar with prompt engineering, vector databases, embeddings, document ingestion, and chaining workflows using frameworks such as LangChain.

Autonomous Systems & Robotics

Worked on AI-driven autonomous systems, particularly drone-based platforms involving perception, control, and learning-based decision-making. Experience integrating vision models with control logic and simulation environments.

Edge AI & Model Optimization

Experience deploying lightweight deep learning models on resource-constrained devices (e.g., Jetson Nano). Focused on optimizing inference speed, memory usage, and model efficiency for real-time deployment.



Hassan Mansoor

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PROFESSIONAL PROFILE

I am Hassan Mansoor from Islamabad, Pakistan, a motivated and results-driven Computer Science student at the National University of Sciences and Technology. I have a strong passion for combining cutting edge technology with practical problem solving, particularly in areas like computer vision, machine learning, and full stack development.

I have gained hands on experience through internships at Esper Solutions and Nokia, contributing to projects such as 3D modeling for virtual try-on applications, real-time pose estimation, and automation of telecom engineering workflows. Alongside this, I have developed creative and multimedia skills through roles in video editing and graphics design, producing high-quality content for Exputer and the NUST Skill Development Club.

My personal projects, including AI-powered firewalls, chess engines, image enhancement apps, and distributed web applications, showcase my ability to bridge complex algorithms with real-world applications. I thrive at the intersection of technology and creativity, and my curiosity, discipline, and love for learning extend into my personal interests in fitness, travel, and cooking.

EDUCATION

BSCS

SEecs, Islamabad, 2.93 (2026)

INTERNSHIP EXPERIENCE

Nokia

07-Jun-2025 - 26-Jul-2026

Automated repetitive engineering workflows using Python scripts, such as network configuration checks, log parsing, and report generation, reducing manual effort for the team. Assisted in designing and maintaining lightweight data pipelines to aggregate and process network performance metrics from multiple internal tools, enabling faster decision-making. Performed exploratory data analysis on network logs to identify trends and potential issues in 2G, 3G, and 4G networks, helping engineers prioritize troubleshooting tasks. Developed simple dashboards and scripts to monitor the health of telecom nodes, visualize key performance indicators, and track network uptime and latency. Collaborated with senior engineers to understand Network Planning Operations (NPO) processes, including capacity planning, fault detection, and optimization of radio access networks. Gained practical exposure

to telecom architecture, workflows, and real world challenges in maintaining large-scale mobile networks, while learning best practices for documentation and internal knowledge sharing.

Esper Solutions

16-Jun-2025 - 16-Aug-2025

Integrated Photogrammetry based 3D modeling into Virtual Try On Glasses app. • Optimized CNN Models via transfer learning for video classification on NVIDIA Jetson Nano. • Implemented a pose-aware limb measurement pipeline by combining segmentation constrained ROI cropping with skeletonization and shortest pathfinding on medial axis for arm length estimation. • Temporally aligned audio and video streams in real-time video feed with OpenCV - minimizing latency.

FINAL YEAR PROJECT

Cognilink: EEG-Powered Cognitive and Mental Health Assessment

Uses brain signals (EEG) to understand how your brain responds during tasks. Predicts cognitive performance and mental health traits like ADHD, Conduct Disorder, and general psychiatric vulnerability. Powered by deep learning models that learn patterns across thousands of participants. Shows which brain regions and time points contributed to predictions using interactive visualizations. Features dashboards for both users and clinicians to track scores, view EEG plots, and explore insights. Aims to

complement traditional assessments, helping with early detection and monitoring of cognitive and psychiatric conditions.

TECHNICAL EXPERTISE

Computer Vision & Deep Learning

Hands-on experience with computer vision pipelines, including pose estimation, segmentation, skeletonization, and 3D modeling. Implemented a limb measurement system combining ROI cropping, medial axis skeletonization, and shortest-path algorithms for accurate arm length estimation. Optimized convolution ...

Full-Stack Web & Application Development

Designed and implemented interactive web applications with React, Redux, HTML/CSS, and JavaScript, focusing on responsive and user-friendly interfaces. Built distributed crawlers, web apps, and integrated deep learning models into Android and web platforms, ensuring seamless cross-platform functionality. ...

AI & Machine Learning Systems

Developed intelligent systems for real-time intrusion detection using Random Forest classifiers and feature-engineered network datasets (NSL-KDD), achieving high accuracy and low false positives. Implemented heuristic-based AI for Chess engines with depth- limited Negamax and Alpha-Beta pruning, supporting ...

Multimedia & Graphics Processing

Experienced in video editing, motion graphics, and image enhancement for both professional and creative projects. Tools used to edit and produce engaging content include Adobe Premiere Pro, After Effects, Photoshop, and Blender. Delivered high-quality visuals for Exputer.com and the NUST Skill Developme ...

Programming & Tools

Proficient in Python, JavaScript, Java, C, HTML/CSS, and React. Skilled in using frameworks and libraries like PyTorch, TensorFlow, Flask, NumPy, Pandas, and OpenCV. Experienced with development and collaboration tools including Git, GitHub, Jupyter Notebook, Visual Studio Code, Slack, and Microsoft Tea ...



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PROFESSIONAL PROFILE

Computer Science undergraduate with practical experience in Android development, quality assurance, and full-stack web technologies. Worked on mobile development and QA internships, with hands-on exposure to manual and API testing. Completed an AI-based final year project using deep learning and LLMs for real-time quality classification and market insights, with a strong interest in building scalable, impactful software solutions.

EDUCATION

BSCS

SEecs , Lahore , 2.71 (2026)

INTERNSHIP EXPERIENCE

Truid

01-May-2024 - 30-Apr-2025

Android Development

Manaknight Digital

01-Aug-2025 - 25-Jan-2026

Quality Assurance

FINAL YEAR PROJECT

Export Edge AI

Vision Based Mango Classification System.The project, Export Edge AI, is designed as an integrated agri-tech solution aimed at transforming the mango exporting business by reducing post-harvest loss and enhancing market competitiveness. This system leverages deep learning (CNNs) and Large Language Models (LLMs) with Retrieval-Augmented Generation (RAG) to perform real-time quality control and market intelligence. By accurately classifying mangoes and providing instant export insights, Export Edge AI automatically generates comprehensive reports, optimizing pricing and destination recommendations for producers and exporters.

TECHNICAL EXPERTISE

Quality Assurance

Manual Testing API Testing Zoho Email Client Dealing Project Management

Android Development

Kotlin Compose Git Flutter Tensorflow lite

Web Development

React js Node js Express js Next js Postgre SQL Mongo DB Tailwind CSS



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PROFESSIONAL PROFILE

My work focuses on building agentic LLM systems, including multi-step tool-use pipelines, autonomous workflow design, retrieval-augmented reasoning, and LLM system integration. I also bring experience across computer vision, object detection, sequence modeling, and early warning systems, enabling me to design agents that reason over both text and visual modalities. My strengths include knowledge distillation, transfer learning, transformers, machine unlearning, and federated learning/unlearning. Beyond technical depth, I bring clear communication, strong ownership, fast learning, and the ability to collaborate effectively in high-velocity environments.

EDUCATION

Bachelor of Science in Computer Science

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.25 (2026)

INTERNSHIP EXPERIENCE

German Academic Exchange Service (DAAD)

01-Jun-2025 - 01-Sep-2025

Main Research topics: LLM fine-tuning, LLM integration, LMs as agents, Diffusion models, Generation of synthetic Docs. Using diffusion models for privacy preserving, and for Layout generation. Focused on creating a privacy-preserving synthetic Document generation framework for AI model training. Tested Qwen2.5, DeepSeek V1, and V2 as an agent to generate HTML from documents. Used Qwen2.5-32B to guide framework and diffusion models for visual elements generation and placement. Implemented LayoutDM, a discrete diffusion model for controllable layout generation of documents.

WALEE

05-Aug-2024 - 31-May-2025

Main topics: Face detection, recognition, and landmark detection. Application of filters on human faces, Application of emotion-based filters. 3D asset creation from images, Face reaging filters. Implemented human face landmark detection and applied filters on faces using those landmarks in real time. Experimented with Google's Mediapipe model for face detection and landmark detection. Contributed to the 3D-Asset generation module, developed a Fast-API for real-time 3D-asset generation. Worked on face age progression filter module using Face Reaging GANs.

TUKL

03-Jun-2024 - 30-Sep-2024

Main topics: Document-AI, Machine Unlearning, Federated Unlearning, Asynchronous FL, Object Detection, Document analysis. Implemented different Federated unlearning techniques and used them for unlearning document data. Used YOLOv8 models in decentralized systems to detect different entities in documents, and then applied Federated unlearning to efficiently make the model unlearn a specific entity. Published a conference paper on Federated Unlearning for documents in ICDAR-2025 as a primary author. Presented the paper myself in CHINA; it was selected for an oral presentation.

Optical Networks and Technologies Lab

05-Jun-2023 - 05-Sep-2023

Main topics: Early Warning Systems, Federated Learning, Knowledge Distillation, ML in optical Networking. Worked on Quality of Transmission Estimation Using ML in Optical Networks. Worked on QOT Estimation in Optical Networks in a decentralized system to prevent the sharing of private information of different vendors. Submitted a journal paper on federated learning based QOT estimation in the IEEE Access journal.

ALKHIDMAT FOUNDATION

25-Aug-2023 - 24-Sep-2023

Took part in different Social & Community Services activities. Collected 10k PKR for the plantation drive. Learnt time management, organizational culture, professional skills, teamwork, workplace diversity, and problem-solving.

FINAL YEAR PROJECT

Text-to-Document: A Generative Framework for Privacy-Preserving Document Image Synthesis

The scarcity of high-quality, shareable document datasets for AI training is a challenge due to slow manual anonymization and privacy issues. With privacy breaches averaging \$4.88M in 2024 and human-generated text for LLMs expected to diminish by 2026–2032, robust AI model development may be limited. The proposed solution is designed to generate structurally coherent, requirement-specific, and semantically aligned real-world documents combining LLMs and diffusion models, for Document AI. Text-to-Document revolutionizes AI training by generating hyper-realistic, privacy-safe documents with authentic handwriting and verified ground truths.

TECHNICAL EXPERTISE

Computer Vision

Experience in face detection, recognition, and landmark detection using deep learning models. Worked on document image analysis, object detection (YOLOv8), crop and shelf-life classification, image stitching from drone imagery, and real-time facial filter applications. Applied computer vision in both centrali ...

Deep Learning

Strong background in designing, training, and evaluating deep neural networks using PyTorch and TensorFlow. Experience with CNNs, autoencoders, transformers, diffusion models, GANs, and sequence modeling for vision and multimodal tasks. Applied techniques such as transfer learning, knowledge distillation, and ...

Large Language Models (LLMs) & Agentic Systems

Hands-on experience with LLM fine-tuning and integration, including Qwen2.5 and DeepSeek models. Built agentic LLM systems with multi-step tool usage, retrieval-augmented reasoning, and autonomous workflows for tasks such as document-to-HTML generation and CV analysis.

Generative Models & Diffusion Models

Worked extensively with diffusion models for layout generation, synthetic document creation, and privacy-preserving data generation. Fine-tuned Stable Diffusion XL (SDXL) using LoRA and explored discrete diffusion for structured layout generation guided by LLMs.

Document AI & Layout Analysis

Research experience in document understanding, layout analysis, and document object detection. Developed synthetic document generation pipelines and applied object detection models for structured document analysis. Published research in ICDAR and submitted work to CVPR.

Federated Learning & Machine Unlearning

Research-focused expertise in federated learning, federated unlearning, and asynchronous FL systems. Implemented unlearning techniques for document data and decentralized object detection models. Published and presented research on federated unlearning at an international conference.

Backend Systems for AI Applications

Built and deployed AI systems using FastAPI and Docker for real-time inference and API-based services. Developed production-level APIs for 3D asset generation, sketch-to-image models, and agent-based applications.



Arham Haroon

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PROFESSIONAL PROFILE

AI Engineer in training with hands-on experience in LLMs, Generative AI, NLP, and Computer Vision, focused on building scalable, real-world AI products. Skilled in deploying LLM-based systems, agentic workflows, and full-stack AI applications. Strong academic foundation (CGPA 3.84) combined with practical industry experience and leadership.

Portfolio Website : <https://arham-haroon-portfolio-website-ttnu.vercel.app/>

EDUCATION

BSCS

SEECs, ISLAMABAD, 3.84/4 (2026)

INTERNSHIP EXPERIENCE

Rapidev

16-Jun-2025 - 15-Aug-2025

Contributed to real-world projects using Agentic AI, NLP, and Computer Vision, collaborating on model design, optimization, and integration into production pipelines for scalable LLM-powered applications.

MachVIS Lab

02-Jun-2025 - 14-Jan-2026

Worked on Computer Vision, NLP, and LLM projects, assisting in model development, fine-tuning, and integration into research and applied AI workflows.

Pakistan Aeronautical Complex (PAC) Kamra, Pakistan

01-Jun-2023 - 01-Aug-2023

Gained hands-on experience in IT infrastructure and cybersecurity, focusing on network security, vulnerability management, and improving system protocols.

FINAL YEAR PROJECT

XMedFusion: Agentic and Expert-Driven AI for Cross-Modal Medical Report Generation

Developed a multimodal AI system for automated radiology report generation from Chest X-rays and CT scans using vision, retrieval, and language agents. Integrated a knowledge-graph-based synthesis pipeline and human-in-the-loop validation to ensure traceable, explainable, and clinically reliable reports.

TECHNICAL EXPERTISE

AI / Machine Learning / Deep Learning

Machine Learning, Deep Learning, Agentic AI (LangGraph, LangChain, CrewAI), NLP, LLMs, Computer Vision

Programming Languages

Python, C, C++, Java

Web & Software Development

MERN Stack (MongoDB, Express.js, React, Node.js), Laravel, REST APIs, MySQL

Tools & Frameworks

Git/GitHub, Linux, Docker, Jupyter, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, TensorFlow, PyTorch



Laiqa Ali

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PROFESSIONAL PROFILE

AI Solutions Developer with hands-on experience in end-to-end ML systems, including LLM-based applications, feature pipelines, model training, and deployment workflows. Strong foundation in machine learning, vector search, and MERN development, with a focus on building AI solutions.

EDUCATION

Bachelor's of Science in Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.3 (2026)

INTERNSHIP EXPERIENCE

WALEE Technologies Lab

01-Jul-2025 - 01-Sep-2025

Developed and deployed scalable full-stack web applications using React.js, Node.js, and REST APIs. Enhanced UI/UX with Tailwind CSS and Material UI, and delivered multiple production-ready projects including Linktree Clone, Skywise, Math-o-Metic, OrganizeIt, and FriendFusion.

10Pearls Pakistan

12-Dec-2025 - 12-Feb-2026

Designed and implemented an end-to-end air quality forecasting system using Python and MLOps practices. Built automated feature pipelines from AQICN/OpenWeather APIs, engineered temporal and AQI trend features, and managed them via a Feature Store (Hopsworks/Vertex AI). Trained and evaluated ML and deep learning models, automated retraining with Airflow/GitHub Actions, and developed a Streamlit + Flask dashboard with SHAP-based explainability and real-time AQI alerts.

FINAL YEAR PROJECT

EduAgent - A Self Optimizing Reward System for Student Engagement Using LLMs

Developing an adaptive learning platform using LLMs and reinforcement learning to personalize learning paths. Features include LLM tutoring, adaptive content sequencing, engagement analytics, and alignment with UN SDG-4 (Quality Education).

TECHNICAL EXPERTISE

Programming

Python, Java, C/C++, JavaScript

AI, ML, DL & NLP

Scikit-learn, TensorFlow, PyTorch, Keras, CNNs, RNNs, LSTMs, Reinforcement Learning, Hugging Face, SpaCy, NLTK, Prompt Engineering

Web Development & Databases

React.js, Node.js, Express.js, Next.js, REST APIs, Streamlit, Flask, MySQL, MongoDB, SQLite

MLOps, Feature Stores & Tools

Git, GitHub, Docker, Google Colab, Vercel, Pinecone, ChromaDB, Hopsworks



Faakhir Ul Hassan Zahid

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PROFESSIONAL PROFILE

- **Software Engineer with 2+ years of experience** in building **scalable backend systems** and **cloud-native applications**.
- Proven track record of **optimizing distributed workflows** using **AWS** and **microservices**, delivering **performance gains** and **cost reductions**.
- Active **open-source contributor** to projects including **Headlamp (Microsoft)**, **sktime**, **Plone**, **Gemini SDK**, and other community tools.
- Experienced in developing **data-intensive pipelines**, **ML-powered services**, and **automation platforms** for real-world production use cases.
- Strong **problem-solving background** with **400+ LeetCode problems solved**, skilled at debugging and fixing things.
- Passionate about **clean architecture**, **reliable systems**, and delivering **high-impact engineering solutions**.

EDUCATION

BSCS

SEECs, Islamabad, 3.27 (2026)

INTERNSHIP EXPERIENCE

SoftwareEngineer@DTCMode(UK - Remote)

15-Jun-2025 - 15-Dec-2025

- Built Jubbly.ai, a tool for AI powered research from data (images, videos, posts, etc) from social media platforms under seconds.
- Worked on automated marketing products, including a high-scale B2B newsletter platform for DTC brands.
- Migrated AI n8n workflows to a scalable, decoupled AWS architecture (Step Functions, Lambda, EventBridge, SQS), reducing execution time by 80% and enabling independent workflow scaling.

SWE Intern @ The Linux Foundation

01-Feb-2025 - 15-Jun-2025

- Contributing to Headlamp, an extensible Kubernetes UI by Kinvolk (now part of Microsoft), specifically the Azure team.
- Improved the headlamp-plugin CLI, enabling seamless plugin installation, configuration management, and updates for in-cluster deployments.
- Introduced Kubernetes-native declarative plugin management via Helm and ConfigMaps.

Backend Engineer @ BLEED AI

01-Sep-2023 - 30-Apr-2025

- Implemented scalable backend pipelines on AWS EC2 to process Upwork's incoming job data, achieving a throughput of 150,000 jobs per month with an average processing time of 40 sec from job posting.
- Developed and deployed 'talent scraping' pipelines using AWS ECS Fargate, capable of scraping 10,000 pages within 3 hours with optimized containerized workflows.
- Implemented cron job scheduler, and notification services at a decent scale.
- Participated in migrating infrastructure from GCP to AWS including CI/CD, cloud run deployments, and object stores.

SWE Intern @ BLEED AI

01-Jun-2023 - 30-Sep-2023

- Managed to refactor of "upautomate" project and improved state management using redux and NextJS/TypeScript.
- Reduced

network latency by optimizing endpoints using multithreading and normalized database.

FINAL YEAR PROJECT

Elevate AI

End to end customer aquisition, sales and marketing automation platform. We help you acquire your first customers using AI-powered marketing strategies tailored to your business needs. So you can focus on what matters most – building and growing your startup.

TECHNICAL EXPERTISE



Sarmad Shabir

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Address: HOUSE NO. C-82 RESALA LANE LORALAI CANTT , Loralai , Pakistan

PROFESSIONAL PROFILE

I am a final year undergraduate student at NUST, currently in my last semester and graduating in the coming months. I have strong skills in frontend development, UI/UX design and machine learning, with hands on experience in building responsive web applications, designing user centered interfaces and developing machine learning solutions for real world problems. Through multiple internships, I have gained valuable industrial exposure and strengthened my technical, teamwork and problem solving skills. I am disciplined, consistent and effective in time management, enabling me to meet deadlines and maintain high quality work. I am eager to begin my professional career and contribute to innovative and impactful technology projects.

EDUCATION

Computer science

SEecs , Islamabad , 3.28 (2026)

INTERNSHIP EXPERIENCE

Takhleeq.ai

05-Feb-2024 - 19-Apr-2024

Join as a UI/UX Designer and worked on their personal website design mainly focused on icons and some pages.

NASTP

01-Jul-2025 - 29-Aug-2025

Join as an AI intern and worked on some AI related tasks Text extraction from Business card for gate entry purpose project HR Assistant for Automated CV shortlisting

Prodigy Solution

15-Sep-2024 - 15-Oct-2024

Join prodigysols as an App and Web Developer and done various development tasks related to web and app For web built a food cafe website and also designed it by myself For App I developed calculator App and weather App also designed them by myself

FINAL YEAR PROJECT

Sehatyab

An AI assistant medical App that connects patients with doctors via two options Online consultation (through video) Request Home visit (doctors will visit patient home) Two AI models are used one is for analyzing symptoms entered by patient and recommend a doctor Second is used to validate the prescription given by doctor

TECHNICAL EXPERTISE

Frontend Developer

I bear a good knowledge of frontend development and I have worked in different frontend languages like html, css, javascript, tailwind css, bootstrap, react, vite and vue. Also have worked on different frontend projects using these technologies.

UI/UX Designer

I am passionate about design, from creating simple social media posts in Canva to designing complete web and mobile app experiences in Figma. I have hands on experience across the full design process, including wireframing, user flows, prototyping,

visual design and branding. With over 2 years of experience, ...

ML Engineer

I have strong knowledge of machine learning with hands-on experience in building and implementing ML solutions. I have worked on projects such as handwriting-based gender prediction, skin cancer detection using deep learning and an AI-powered HR assistant for CV shortlisting. My expertise includes data prepro ...



Rabbiya Riaz

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PROFESSIONAL PROFILE

Software Engineer with hands-on experience building **Python** backend systems, **ML-enabled** applications, and **automation** workflows. Proven ability to debug and refactor production ML pipelines, improving model accuracy from ~10% to ~80% by correcting data preprocessing, resolving feature-model mismatches, and fixing system-level inconsistencies. Comfortable working across **software engineering** and **applied AI**, integrating ML models into reliable, scalable services rather than treating them in isolation.

EDUCATION

BS Computer Science

SEECs , Islamabad , 3.14 (2026)

INTERNSHIP EXPERIENCE

School of Electrical Engineering and Computer Science (SEECs), NUST

03-Jul-2025 - 01-Sep-2025

Software / ML Intern: Debugged and modified core pipeline logic, including graph construction for skeleton data , to align system behavior with updated input specifications. Analyzed and restructured an existing Python-based ML automation pipeline to support a new data source, redesigning preprocessing workflows for compatibility and reliability. Improved pipeline accuracy from ~10% to ~80% by resolving data inconsistencies, fixing preprocessing failures, and validating end-to-end automation flow. Worked with an existing GitHub codebase to identify failure points and ensure correct execution across multiple datasets.

FINAL YEAR PROJECT

Federated Learning-Based Mental Health AI Platform (FYP)

Applied federated learning principles to address data-privacy constraints in multi-client mental health systems, enabling privacy-preserving, client-isolated model training without centralized data sharing. Built a modular FastAPI backend to decouple authentication, AI logic, and data access, improving scalability, data isolation, and long-term maintainability. Integrated DistilBERT-based NLP pipelines and AI-driven REST APIs to support chat, questionnaires, and reporting workflows, enabling end-to-end ML feature integration.

AI-Powered English Conversation Practice App (Academic Project)

Used Speech-to-Text and large language model APIs (LLaMA) to enable real-time, context-aware conversational responses for spoken English practice. Implemented Text-to-Speech pipelines to provide natural, bidirectional voice feedback and improve user engagement. Built a cross-platform Flutter application integrated with Firebase (Auth, Firestore, Storage) to manage user state and persist conversation data across sessions.

Amazon Price Tracker (Academic Project)

Developed a hybrid web scraping system using Requests for lightweight pages and Selenium for dynamically rendered product pages to reliably track price changes. Implemented structured data extraction for price, availability, and ratings using HTML parsing with CSS/XPath selectors. Added automation features, including scheduled price checks and alert notifications when prices dropped below defined thresholds.

TECHNICAL EXPERTISE

Backend & APIs

FastAPI, Flask, RESTful API Design, Authentication (OAuth 2.0, Firebase Auth)

Automation & Integration

Web Scraping, API Integration, Workflow Automation

Machine Learning

PyTorch, Model Training & Evaluation, Data Preprocessing

DevOps & Deployment

Docker, GitHub, Railway, Vercel

CS Fundamentals

Data Structures, Algorithms, OOP, Debugging

Programming

Python, Javascript, C



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PROFESSIONAL PROFILE

Final-year Computer Science student at NUST with a strong foundation in deep learning research. Passionate about Ethical AI, with active research focused on Machine Unlearning. Experienced in building medical AI solutions, including neonatal pain assessment and disease detection systems. Seeking opportunities to apply expertise in AI safety and computer vision to solve complex real-world problems.

EDUCATION

Bachelor of Science in Computer Science

School of Electrical Engineering & Computer Science , Islamabad , 3.19 (2026)

INTERNSHIP EXPERIENCE

KBS Lab

01-Sep-2024 - 30-Jun-2025

Researched machine unlearning techniques for privacy-preserving neural networks and transfer learning methods to improve generalization across vision datasets.

Melior

01-Jun-2024 - 31-Aug-2024

Developed real-time emotion recognition models for marketing by integrating audio data streams to improve customer engagement efficiency.

Ehsaas

01-Jun-2023 - 31-Aug-2023

Built a full-stack web platform connecting patients with attendants by featuring real-time updates and successfully reducing request latency by 25%

FINAL YEAR PROJECT

PANDA: Pain Assessment in Neonates using Deep Learning and Analytics

PANDA is a research project that utilizes Deep Learning to assess pain levels in neonates due to their inability to communicate. The project analyzes brain activity, EEG signals, to provide objective pain quantification, aiming to overcome the limitations of manual observation in neonatal intensive care units.

TECHNICAL EXPERTISE

Machine Learning & Deep Learning

CNNs, RNNs, GANs, RAG, Transformers, Transfer Learning, Machine Unlearning, LLMs, Agentic AI.

Programming Languages

Python, JavaScript, TypeScript, Java, Kotlin, C#, C++, SQL.



Eashah Emaan Bajwa

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PROFESSIONAL PROFILE

Fullstack Software engineer specializing in production-grade SaaS systems, including payments, automation, real-time features, and scalable API architectures. Experienced in designing and delivering reliable, secure, and maintainable infrastructure that supports core platform functions such as authentication, subscriptions, messaging, background processing, reporting, and live data synchronization. Proven ability to integrate complex third-party services (Stripe, PayPal, Twilio, Supabase, cloud platforms) and build systems for real-world usage—not prototypes. Seeking to contribute at the system level on products that require robustness, performance, and long-term scalability beyond basic CRUD applications.

EDUCATION

Computer Science

SEECs, Islamabad, 3.2 (2026)

INTERNSHIP EXPERIENCE

Bitsmiths Studios

01-Sep-2024 - 01-Dec-2025

Led end-to-end development of two major web applications built entirely with Next.js, focusing on scalable architecture, performance optimization, and responsive design. Integrated complex third-party services including Stripe, PayPal, Twilio, and Yoti, enabling secure payments, messaging, and identity verification. Implemented real-time features such as live chat using Supabase Realtime, ensuring smooth synchronization across distributed clients. Built flexible content and component systems such as Directus CMS streamlining development and empowering non-technical teams to manage content easily. Managed deployment pipelines on Coolify and implemented React Query/Zustand for state management and efficient data handling, optimizing performance and maintainability. Collaborated with remote Agile teams to deliver production-ready releases on tight deadlines while maintaining clean, well-documented, and performant code.

PLUS W (Japan)

01-Jan-2025 - 16-Jan-2026

Gaining hands-on experience in Data Science, working with machine learning models, data preprocessing, and analysis. Learning Japanese language skills to enhance communication and cultural understanding in a professional setting. Developing problem-solving skills by applying data science techniques to real-world challenges under industry mentorship.

AI Raheem Technologies

01-Sep-2023 - 01-Dec-2023

Developed and implemented user-friendly interfaces for a lift management service for a Saudi Arabia company, utilizing Angular, resulting in a 20% increase in user engagement metrics. Utilized agile methodology to prioritize tasks, streamline workflow efficiency, and meet project milestones ahead of the deadline. Collaborated with cross-functional teams to integrate UX/UI design principles into front end development projects, resulting in a 25% improvement in user satisfaction ratings from overseas customers.

GoSaas Labs

01-Jun-2024 - 31-Aug-2024

Spearhead the development of a reporting microservice to consolidate all GoSaas products, leveraging React, Node.js, PostgreSQL, and Knex. Developed a TypeScript-based website interface for the microservice using React and MUI to ensure a consistent, stable design. Implemented a Node.js backend with Knex for efficient query building and PostgreSQL for data management. Integrated Zod and React Hook Form for robust validation, employed BullMQ for task queuing, and incorporated XSL transformations for advanced data processing. Architect a priority queue system to handle load balancing, preventing microservice failure, with BullMQ for effective

queuing. Developed connection adapters (PostgreSQL, Oracle) and destination adapters (AWS S3) to enhance data transfer capabilities. Automated help desk support through a customized Google Workspace embedding, facilitating seamless user experience. Enhanced web applications with Apps Script

ThinkSoft

01-Dec-2025 - 01-Dec-2025

Contributed to the development of the company's in-house product by implementing features, refining existing functionality, and assisting in building components used in the production environment.

FINAL YEAR PROJECT

Deep Learning-Based User Interface Adaptation via Cognitive and Contextual Sensing.

Designing an adaptive productivity UI that uses ML to infer user cognitive state from behavioral telemetry and physiological signals. The interface dynamically adjusts complexity, highlights relevant tools, and offers context-aware assistance to reduce cognitive load. A modular framework, prototyped within an IDE, integrates HCI, cognitive science, and ML principles.

TECHNICAL EXPERTISE

AI / ML Systems Integration

Built AI-driven features using OpenAI Whisper for speech-to-text and custom CNN models for video analysis; designed pipelines for media ingestion, preprocessing, inference, and result delivery in production environments.

Backend Architecture & APIs

Design and implementation of scalable backend systems using FastAPI, Node.js, PostgreSQL, and Supabase; schema modeling, RESTful API design, authentication flows, and secure data access for SaaS platforms.

Payments & Subscription Infrastructure

End-to-end integration of Stripe and PayPal with webhook-based billing, subscription lifecycle management, and transactional event handling for reliable, production-grade monetization.

Asynchronous Processing & Automation

Development of background job systems using Celery and BullMQ for long-running tasks, AI workloads, reporting pipelines, and automation with fault tolerance and workload prioritization.

Real-Time & Event-Driven Systems

Implementation of live features (chat, dashboards, data sync) using Supabase Realtime and WebSocket-based patterns for low-latency, event-driven application behavior.

Cloud, Data Pipelines & Deployment

Containerized deployments with Docker, cloud storage integrations, and structured data pipelines for reporting, exports, and analytics at scale, with a focus on performance, reliability, and maintainability.

Full-Stack Collaboration

Ability to work across backend and frontend boundaries using React/Next.js, React Query, and modern UI frameworks to ensure efficient data handling and production-ready feature delivery.



Abubakar Khan

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PROFESSIONAL PROFILE

As an aspiring ML Engineer, I bring hands-on experience in machine learning, deep learning, and web development. My expertise includes building convolutional neural networks, applying advanced image processing techniques, and leveraging large language models (LLMs) for retrieval-augmented generation and conversational AI. I am committed to continuous learning and skilled in applying modern AI methodologies to deliver innovative and practical solutions.

EDUCATION

Computer Science

SEECs, Islamabad, 2.94 (2022)

INTERNSHIP EXPERIENCE

Aerial Robotics Lab, SINES, NUST Islamabad

01-Jun-2024 - 31-Aug-2024

During my internship, I gained hands-on experience in building machine learning models and neural networks from scratch, with a focus on deep learning techniques. I developed convolutional neural networks for image processing and conducted research to optimize and improve these models for real-world applications.

FINAL YEAR PROJECT

HunarmandAI: Culturally-Aware Intelligent Tutoring for Low-Literacy Urdu Speakers

This project presents the development of an Intelligent Tutoring System (ITS) that brings advanced Urdu reasoning and dialogue generation capabilities to underserved, low-literacy learners. Designed for real-time, interactive education, the system leverages multimodal interaction—combining Urdu text and speech—to deliver personalized learning experiences that adapt to both content type and learner proficiency. A core aspect of the project involves curating low-resource Urdu datasets covering both theoretical and vocational content, as well as translating German vocational training materials into Urdu and/or English to enrich and diversify the learning corpus. The system is powered by specialized fine-tuned language models (SLMs), optimized for fluency, comprehension, and contextual reasoning in Urdu. To ensure accessibility, cultural relevance, and pedagogical effectiveness, the system incorporates evaluation frameworks that assess response quality (accuracy, fluency, relevance) and overall user experience. By bridging linguistic and educational gaps through AI-enhanced, multilingual content delivery, this project contributes to inclusive digital education and lays the groundwork for impactful academic research and real-world deployment.

TECHNICAL EXPERTISE

Python

Used for end-to-end development of machine learning models, data processing, and backend services.

Machine Learning

Experience with supervised and unsupervised algorithms, feature engineering, and model evaluation.

Deep Learning (PyTorch)

Built and trained neural networks including CNNs and transformer-based models using GPU acceleration.

Computer Vision (OpenCV)

Implemented image processing and vision pipelines for detection, classification, and board/state analysis.

Natural Language Processing (NLP)

Developed RAG-based systems using embeddings, vector databases, and prompt-driven inference.

Model Fine-Tuning (LoRA / PEFT)

Fine-tuned large language models efficiently using parameter-efficient techniques.

Git & GitHub

Version control, collaborative development, and project management using Git workflows.



Abdul Rehman

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PROFESSIONAL PROFILE

Undergraduate researcher specializing in deep learning for medical imaging, with experience in MRI segmentation, retinal disease classification, and dental implant detection using explainable AI

EDUCATION

BS Computer Science

SEECs , Islamabad , 3.75/4.0 (2026)

INTERNSHIP EXPERIENCE

Gengini

01-Jun-2025 - 31-Aug-2025

Machine Learning Intern

DeepLearningLab, National Center of Artificial Intelligence (NCAI)

01-Jun-2025 - 31-May-2026

Research Assistant

Brain Vision Lab

23-Jan-2026 - 23-Jan-2026

Research based project on identification of LLM Bias

FINAL YEAR PROJECT

AI-Based Automatic Frequency Offset Selection for bSSFP CINE MRI at 3.0 Tesla

Balanced Steady State Precision (bSSFP) CMR sequence provides high contrast but is sensitive to off-resonance effects, requiring frequency scouting to minimize banding artifacts. Manual selection is time-consuming and subjective, warranting an AI-driven solution. Objective: To develop and validate an AI-based algorithm for automatic frequency offset selection in bSSFP CMR. Methods:

- Study Design: Study in 100 patients at 3T.
- AI Model: A deep learning algorithm trained on bSSFP scout data to predict optimal frequency offsets.
- Comparison: AI-selected vs. manually selected offsets assessed for artifact reduction, image quality, and efficiency.
- Outcomes: Primary: Optimal banding suppression. Secondary: Time efficiency and agreement with experts. Expected Impact: AI-driven frequency selection could improve image quality, standardize CMR workflows, and reduce scan time.

TECHNICAL EXPERTISE

Machine Learning & Deep Learning

Hands-on experience in machine learning and deep learning techniques, including supervised and unsupervised learning, CNNs, GANs, and deep neural networks. Applied these methods to real-world research problems with strong performance across classification and segmentation tasks.

Medical Imaging & Healthcare AI

Specialized in AI-driven medical imaging, with experience in MRI segmentation, cardiac CINE MRI analysis, retinal disease classification, and dental implant detection. Developed and evaluated clinically relevant models using healthcare datasets and research-grade benchmarks.

Computer Vision & Image Processing

Expertise in computer vision and image processing techniques such as image segmentation, object detection, feature extraction, and image analysis. Implemented Faster R-CNN, U-Net variants, ResNet, and multi-scale architectures for high-accuracy visual understanding.

Natural Language Processing & Speech

Experience in NLP and speech processing, including sentiment analysis, topic modeling, speech-to-text, and text-to-speech systems. Built NLP pipelines using TF-IDF, Logistic Regression, LDA, and integrated speech modules into real-time applications.

Research & Experimental Design

Experienced in research-driven AI development, including dataset curation, annotation, benchmarking of 2D and 3D architectures, ablation studies, and preparation of results for conference and journal publications.



Asghar Ali

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PROFESSIONAL PROFILE

Computer Science undergraduate and **Full-Stack & React Native Developer** with hands-on experience building scalable web and mobile applications using modern technologies. Proficient in **React, Next.js, Angular**, and **React Native**, with strong backend expertise in **NestJS, Express**, and database management using **Prisma** and **MySQL**. Experienced in deploying production-ready systems using **Docker, CI/CD pipelines**, and cloud platforms, as well as integrating real-time features, media-processing solutions, and mobile-native functionality. Demonstrated ability to work across the full development lifecycle, collaborate in team environments, and deliver performant, maintainable software solutions.

EDUCATION

Bachelors of Computer Science

SEECs, Islamabad, 2.88 (2026)

INTERNSHIP EXPERIENCE

DevGate

17-Jun-2024 - 16-Aug-2024

- Developed and deployed the "Bachat" web application, enabling users to pool money for committees, with a focus on dashboard and new committee programs screens.
- Utilized Next.js, TypeScript, Express.js, Tailwind CSS, and MongoDB to build robust and scalable APIs, ensuring seamless integration across the application.
- Led the frontend development of an Attendance System for government employees, managing a team of 2, to deliver a high-quality, user-friendly application.
- Collaborated closely with backend engineers, ensuring smooth integration and adherence to project timelines in a MERN stack environment.

Enabling Systems

21-Jul-2025 - 29-Aug-2025

Implemented camera functionality using native Android code, integrating CameraX with React Native via native modules. Developed and applied real-time camera filters, handling image processing and preview customization. Built a real-time communication app using WebSockets, enabling efficient two-way data exchange. Focused on performance optimization, native-JS bridge communication, and reusable React Native components.

FINAL YEAR PROJECT

Parhlai!

Parhlai is an AI-based web platform designed to assist students preparing for competitive entry tests such as NUST NET, MDCAT, ECAT, and NUMS. Traditional preparation methods rely on expensive academies and static MCQ banks that do not adapt to individual student needs. Parhlai aims to provide an affordable, accessible, and personalized alternative using artificial intelligence. The system automatically generates syllabus-aligned MCQs from FSc textbooks using Natural Language Processing and fine-tuned Large Language Models. Unlike static question banks, the platform adapts to syllabus changes and continuously personalizes practice based on student performance. Key Features AI-generated and validated MCQs Chapter-wise practice, quizzes, and mock tests Adaptive difficulty based on student performance Performance analytics and progress tracking Secure authentication and user data protection System Architecture & Technologies Frontend: Modern web framework (React / Next.js) Backend: FastAPI Database: MongoDB AI Pipeline: Encoder, Retriever, Generator, Validator Development Model: Incremental & Object-Oriented Impact Parhlai reduces dependency on costly coaching centers and improves learning outcomes through personalized, data-driven preparation. The platform is scalable and can be extended to additional entry tests and subjects in the future.

TECHNICAL EXPERTISE

Full-Stack Web Application Development

Experienced in building and deploying end-to-end web applications using modern frontend and backend technologies. Strong expertise in frontend development with React, Next.js, and Angular, focusing on scalable UI architecture and performance optimization. Proficient in backend development using Express.js and ...

React Native Mobile Application Development

Experienced in building high-performance cross-platform mobile applications using React Native with a strong focus on scalability and native integration. Hands-on experience integrating native Android code with React Native through native modules, including camera functionality using CameraX and real-time cam ...



Abdul Moez Asad

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PROFESSIONAL PROFILE

Hello I am Abdul Moez Asad. I am 22 years old. Currently in my final semester, and pursuing bachelors in Computer Science from SEECS, NUST. I am currently employed at Alfabolt for almost 2 years now where my role is of Junior Software Engineer. I have slightly more edge towards Frontend engineering and worked on technologies such as ReactJs and NextJS and recently shifted

to backend working on Django based Applications.

Here is link to my CV:

[Abdul Moez Asad CV](#)

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.4 (4)

INTERNSHIP EXPERIENCE

Alfabolt

10-Jun-2024 - 01-Sep-2024

Frontend development of Internal management tool Alfabolt website revamp Contributed in client projects

FINAL YEAR PROJECT

Fortis Aegis

Fortis Aegis is a next-generation, AI-powered asset management and trading platform designed to operate autonomously across a diverse range of asset classes, including cryptocurrencies, equities, commodities like gold, ETFs, and more. Built on a foundation of advanced artificial intelligence and machine learning algorithms, the platform continuously scans global markets to uncover arbitrage opportunities, optimize investment portfolios, and forecast asset price movements with high precision. It integrates real-time risk management frameworks that dynamically adjust to market volatility, geopolitical events, and individual investor profiles, ensuring both capital growth and preservation. Tailored for both novice and experienced investors, Fortis Aegis functions as a fully automated, self-evolving system that minimizes human intervention while maximizing efficiency and profitability. Its intuitive interface and adaptive learning capabilities make it not just a financial tool, but a comprehensive digital shield in today's fast-paced and unpredictable markets.

TECHNICAL EXPERTISE

Frontend (NextJS, ReactJS)

2+ industry years experience in NEXTJS and ReactJS working on variety of projects.

Backend (Django, Postgres, AWS, Docker)

worked on django based applications for 2+ years

AI

Worked on LangChain and LangGraph Based applications



Avinash Kumar

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PROFESSIONAL PROFILE

Python programmer and AI/machine learning engineer with a strong understanding of machine learning algorithms and techniques, seeking a challenging role in a dynamic organization where I can use my skills to develop and implement innovative solutions to real-world problems. I am passionate about using technology to solve complex problems and make a positive impact on society.

EDUCATION

No education information provided.

INTERNSHIP EXPERIENCE

FINAL YEAR PROJECT

Multiplayer Pong game

Pong game which can be played by one or two player with GUI and various other features like power ups

Rain Predictor

This model predicts with the help of some information like wind pressure, humidity etc wether it will rain tomorrow or not.

House Price pridiction

Predict the price of house by taking information like location, number of rooms,area etc

TECHNICAL EXPERTISE



Ahmad Jan

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PROFESSIONAL PROFILE

Graduating Computer Science student at NUST and currently working as an AI Engineer at Markaz Technologies, with hands-on experience in building and deploying AI-driven and full-stack solutions. Strong background in deep learning, computer vision, and scalable web/mobile application development, with proven work on production systems and research-oriented projects. Actively involved in developing Medlingo, an LLM-powered clinical decision support system, as a Final Year Project. Complemented by leadership experience in AIESEC and university societies, demonstrating strong teamwork, communication, and execution skills. Passionate about applied AI, intelligent systems, and real-world impact through technology.

EDUCATION

Computer Science

SEECs , Islamabad , 3.7 (2026)

INTERNSHIP EXPERIENCE

Markaz Technologies

22-Dec-2025 - 29-Jan-2026

AI-Engineer Working on applied AI solutions within a production environment, contributing to the development and integration of intelligent systems. Involved in designing, testing, and optimizing AI-driven features aligned with real-world business use cases. Collaborating with cross-functional teams to deploy scalable and reliable AI components in live products.

Dense Fusion

03-Jun-2024 - 03-Jan-2025

Web Developer Developed a full-stack web application using React and Node.js to monitor and analyze crop health. Integrated Sentinel Hub APIs to visualize NDVI maps and geospatial data for agricultural insights. Built interactive dashboards for field mapping, data visualization, and user interaction. Implemented secure backend services with Google authentication and GeoTIFF image processing. Deployed and maintained the application on Vercel, ensuring scalability and uptime.

Sines Computer Vision Lab

03-Jun-2024 - 28-Jul-2024

Computer Vision Intern Contributed to real-world computer vision projects focused on object detection and recognition. Prepared, annotated, and managed datasets using Roboflow to improve training efficiency. Implemented and fine-tuned YOLO-based models to enhance detection accuracy. Assisted in evaluating model performance and iterating on improvements.

SaleTale

04-Aug-2025 - 07-Dec-2025

Full Stack Development (Personal Project for a company) Built a sales tracking system serving 300+ mobile users using React Native and RESTful APIs. Designed and developed a role-based admin dashboard for analytics and user management. Implemented backend services with Node.js, JWT authentication, and MongoDB aggregation pipelines. Deployed and managed infrastructure on AWS EC2 with HTTPS (Nginx) and PM2 for process reliability. Collaborated on UI/UX design using Figma to ensure a clean and intuitive user experience.

Freelance Platforms

06-Jan-2020 - 29-Jan-2026

Freelance Graphics Designer Designed logos, brand mockups, and digital assets for 15+ clients across various industries. Delivered end-to-end creative solutions while managing client communication and revisions. Maintained high client satisfaction through

consistent quality and timely delivery.

Freelance Platforms

06-Jan-2020 - 29-Jan-2026

Freelance Graphics Designer Designed logos, brand mockups, and digital assets for 15+ clients across various industries. Delivered end-to-end creative solutions while managing client communication and revisions. Maintained high client satisfaction through consistent quality and timely delivery.

FINAL YEAR PROJECT

Medlingo-Medical LLM with Mixture of Experts

MedLingo is a clinical decision-support system that uses a Mixture-of-Experts (MoE) framework with specialized models for different medical domains. By integrating text, imaging, and electronic health records, it delivers accurate, scalable, and context-aware insights to support reliable healthcare decision-making

TECHNICAL EXPERTISE

Frontend Developer

I have a 1.5+ years experience of working as a FrontEnd developer using technologies such as React, Angular and Next.js. In this time I've worked for notable companies like DenseFusion.

AI & Machine Learning

Hands-on experience in designing, implementing, and deploying AI systems in production and research settings. Worked on applied AI use cases including intelligent decision systems, computer vision models, and AI-driven product features.

Large Language Models (LLMs) & AI Systems

Experience building LLM-powered applications through academic and project work, including a clinical decision support system (Medlingo). Familiar with system design, model integration, and applying LLMs to domain-specific problems.

Full Stack Web Development

Proficient in building scalable full-stack applications using React, Node.js, Express, and RESTful APIs. Experienced in developing dashboards, authentication systems, and data-driven interfaces for production environments.

Database Design and Data Management

Skilled in working with relational and NoSQL databases including MongoDB, MySQL, Firebase, and SQLite. Applied aggregation pipelines, query optimization, and structured data modeling.

Cloud Deployment & DevOps

Experience deploying and managing applications on AWS EC2 and Vercel. Familiar with server configuration, HTTPS setup using Nginx, process management with PM2, and scalable deployment workflows.

Data Annotation & Model Training Pipelines

Experienced in dataset preparation, annotation, and management using Roboflow. Built efficient training pipelines to improve model performance and training accuracy.

System Design & Problem Solving

Skilled in translating problem statements into structured system designs, balancing technical feasibility with scalability and user needs. Applied across AI systems, full-stack applications, and research projects.

Research Oriented Development

Comfortable working in research-aligned environments, combining academic concepts with applied engineering. Experienced in experimenting, evaluating results, and iterating on technical solutions.

Technical Leadership & Team Management

Experience leading and contributing within cross-functional teams across technical and non-technical domains. Comfortable coordinating with developers, designers, product stakeholders, and organizers to drive projects and initiatives forward.

Organizational Leadership

Held leadership roles in AIESEC and university societies, managing teams, delegating responsibilities, and ensuring timely execution of initiatives. Developed strong people management and coordination skills in fast-paced environments.

Strategic Planning & Execution

Involved in planning and executing initiatives, events, and team activities within societies and AIESEC. Developed an understanding of goal-setting, operational planning, and execution under constraints.



Abdul Rehman Memon

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PROFESSIONAL PROFILE

Full Stack Engineer with hands-on experience building **scalable SaaS platforms, distributed systems, and cloud-native applications**. Strong background in **Next.js, Node.js, Go, AWS, and PostgreSQL**, with proven ability to design high-performance backends and modern frontend experiences. Built production systems serving **hundreds of enterprise users**, including Redis-compatible servers, real-time platforms, and payment-enabled applications. Seeking to contribute to high-impact engineering teams solving complex, real-world problems.

EDUCATION

Computer Science

SEECs NUST , Islamabad , 4/4

INTERNSHIP EXPERIENCE

HPC LAB

24-Jun-2024 - 24-Aug-2024

AI/ML intern

Asteramind

31-Oct-2023 - 31-Dec-2023

Working currently as React Developer Intern In my role as a Junior React Developer at Asteramind, I specialize in crafting dynamic user interfaces and enhancing user experiences. Leveraging my expertise in React.js, Redux, and modern front-end tools, I actively contribute to our projects. I am a collaborative team player, ensuring clean, maintainable code and fostering a positive work environment. Committed to continuous learning, I stay updated on emerging technologies to drive innovation in our development processes

Asteramind(React Js Developer)

01-Jan-2024 - 31-May-2024

Worked on <https://shipfro.com/> as a junior React Developer

Asteramind(NEXT Js Developer)

06-Jun-2024 - 22-Aug-2024

Worked as Next Js Developer on SaaS project of company

BrainBox Automations

01-Apr-2025 - 28-Jan-2026

Worked as a software engineering

Alfabolt

28-Jan-2026 - 28-Jan-2026

Working as software engineer on clients project

FINAL YEAR PROJECT

Nust Laptops

Developed a dynamic e-commerce platform utilizing the MERN stack, featuring robust APIs and responsive design for seamless user interaction. Implemented Stripe checkout integration for secure transactions. Delivered an array of innovative features to enhance the shopping experience.

DSA Visualizer

Developed an immersive platform utilizing React.js and Redux Toolkit to visualize a range of algorithms and data structures including sorting algorithms, trees (BST, AVL), heaps (min/max), and segment trees. Detailed timing information is provided to offer insights into algorithm performance. Integrated animations effectively demonstrate the functionality of each algorithm and data structure, facilitating a comprehensive understanding for users."

CropConnect

Crop Connect is a comprehensive platform designed for farmers to facilitate buying and selling products through a dedicated marketplace. It features community chats with public groups, allowing users to create their own groups or direct messages. The platform also offers event registration, valuable resources, an admin panel, and store analytics to help farmers manage and grow their businesses effectively.

Gone But Never Forgotten

<https://www.gonebut-neverforgotten.com/> Created Online Tribute website using NEXT Js along with typescript using PRISMA ORM, R3 database for file storage and mongodb as a general database. Utilized Redux Toolkit for efficient state management

HireMind

AI powered realtime interview engine

TECHNICAL EXPERTISE



Muhammad Abdullah

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PROFESSIONAL PROFILE

Machine Learning and AI Engineer with a strong data-driven mindset and hands-on experience across Machine Learning, Data Science and Generative AI. Skilled in building end-to-end intelligent systems, including data pipelines, predictive models, deep learning architectures and LLM-based applications using RAG and multi-LLM frameworks. Currently contributing to a DAAD-funded Generative AI project at DFKI, Germany, delivering scalable, real-world AI solutions for personalized education. Experienced in applying ML and analytics across education, healthcare, and security domains, with a strong foundation in NLP, computer vision, and full-stack AI development. Passionate about transforming complex data and advanced AI research into practical, production-ready systems with measurable impact.

EDUCATION

Bachelor of Science in Computer Science

SEECs, Islamabad, 3.43 (2026)

INTERNSHIP EXPERIENCE

Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI)

01-Jun-2025 - 01-Sep-2025

Advancing a DAAD-funded initiative focused on improving vocational education through Generative AI. - Enhancing and maintaining a personalized learning platform tailored to diverse learner profiles. Designing automated assessments and implementing user history tracking to generate adaptive learning content. - Collaborating with NAVTTC and TEVTA (Pakistan) to deploy AI-driven solutions within vocational training institutes.

Machine Vision & Intelligent Systems Lab (MACHVIS), NUST SEECs

01-Jun-2024 - 01-Sep-2024

Developed deep learning models for leaf disease classification, segmentation, and multi-class image recognition. Worked on an NLP project for automatic image captioning, applying deep learning techniques and advanced model architectures.

FINAL YEAR PROJECT

Multilingual Personalized Vocational Training Using Recommendation Intelligence for Youth Empowerment

This project presents an AI-driven vocational training platform designed to address the lack of personalization, digitization, and multilingual support in Pakistan's vocational education system. The system builds detailed learner profiles capturing skill levels, preferences, and learning behavior to generate adaptive learning pathways that dynamically adjust content difficulty, depth, and delivery mode in real time. Using a shared bilingual dataset enriched through German-to-Urdu and English translation, the platform provides localized, culturally relevant training content. Large Language Models (LLMs) and Natural Language Processing (NLP) are leveraged to automate the generation of quizzes, tutorials, and microlearning modules aligned with Bloom's Taxonomy, enabling continuous assessment and personalized feedback. The system integrates intelligent recommendation algorithms and retrieval-augmented generation to optimize content sequencing and pacing, ensuring prerequisite-aware learning. Initially focused on the Auto Electrician trade and aligned with TEVTA and NAVTTC curricula, the platform is scalable to other vocational domains. Effectiveness is evaluated through learner engagement, knowledge retention, recommendation relevance, and measurable skill improvement, contributing to inclusive, industry-aligned vocational education.

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Experienced in building intelligent systems using machine learning, deep learning, and Generative AI, including supervised and unsupervised models such as Decision Trees, Random Forests, and clustering algorithms. Strong understanding of model training, evaluation, and optimization.

Deep Learning Architectures

Proficient in designing and training CNNs, RNNs, and Transformer-based models for real-world tasks in computer vision and NLP, including classification, segmentation, sequence modeling, and generation.

Generative AI, LLMs & RAG Systems

Hands-on experience with Large Language Models, Retrieval-Augmented Generation (RAG), prompt engineering, and fine-tuning. Built scalable LLM applications using Hugging Face, LangChain, LlamaIndex, and OpenAI APIs, integrated with vector and graph databases.

Computer Vision

Developed vision-based systems using OpenCV, CNNs, and deep learning frameworks for image classification, segmentation, and multi-class recognition, including dataset compilation and preprocessing.

Natural Language Processing (NLP)

Applied NLP techniques for text generation, understanding, and multimodal tasks such as automatic image captioning, leveraging transformers and sequence models.

Data Engineering & Automation

Skilled in data collection, cleaning, and pipeline development, including web scraping using Selenium, Scrapy, and Playwright, and automating workflows for large-scale data processing.

Programming Languages

Strong programming background in Python, C++, Java, JavaScript/TypeScript, with working knowledge of R, MATLAB, Assembly (x86) for systems-level and analytical tasks.

Frameworks & Libraries

Extensive experience with PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, and modern full-stack frameworks including Flask, Next.js, and the MERN stack.

Databases & Storage Systems

Worked with vector databases, graph databases, MongoDB, and SQL-based systems to support ML pipelines, RAG systems, and scalable AI applications.

DevOps & Development Tools

Experienced with Git, GitHub, Docker, Linux, and collaborative development tools such as Slack and VS Code, enabling reproducible experiments and production-ready deployments.



Rashid Yaseen

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PROFESSIONAL PROFILE

Versatile Software Developer combining deep technical expertise in AI/ML with full-stack mobile and web development. Skilled in building end-to-end solutions, leveraging Flutter and Express.js for frontend/backend interfaces while utilizing Generative AI (LLMs, RAG) for intelligent core logic. Strong background in DevOps practices, including AWS, Docker, and Git, ensuring scalable and secure deployments. Successfully engineered and deployed secure model inference systems during a 4-month internship at NCAI.

EDUCATION

BSCS

SEECs , Islamabad , 3.12 (2022)

INTERNSHIP EXPERIENCE

National Center for Artificial Intelligence (NCAI)

01-Jan-2026 - 30-Apr-2026

Successfully engineered and deployed secure model inference systems during a 4-month internship at NCAI."

FINAL YEAR PROJECT

AI Based Malware Detection and Prevention System

Developed a comprehensive Autonomous Malware Defense System as a Final Year Project. The solution employs a hybrid architecture combining ensemble learning algorithms for high-precision static and dynamic analysis. To address zero-day threats, the system utilizes Large Language Models (LLMs) to contextualize and analyze real-time system telemetry and process behavior. Furthermore, an Agentic AI module was engineered to close the security loop, enabling the system to autonomously assess risk levels and execute immediate, dynamic containment strategies to neutralize malicious activities.

TECHNICAL EXPERTISE

Flutter

Expert at building Mobile Apps and Web apps.

Complete ML engineer

Holistic ML Engineer with a full-stack proficiency in AI, covering Deep Learning, LLMs/RAG, and MLOps for scalable, production-grade solutions.

Devops

Streamlined full-stack application deployment through automated CI/CD pipelines, utilizing Docker for containerization and Kubernetes for orchestration within AWS cloud environments.

Linux System Admin, RHEL

More than enough knowledge of linux system administration required for RHEL exam. Proficient at maintaining servers, lvms creation etc, user roles, storage and processes management.



Muhammad Saad Ibrahim

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PROFESSIONAL PROFILE

I enjoy building software across the stack—from Spring Boot APIs to Next.js frontends—but I know there is always more to master. I am seeking a position at a company that prioritizes code quality and mentorship, where I can refine my skills and grow into a Senior Developer role over the long term.

EDUCATION

Bachelors in Computer Science

Seecs, Islamabad, 3.14 (2026)

INTERNSHIP EXPERIENCE

Erays Technologies

25-Jul-2024 - 25-Sep-2024

During my 3-month internship, I worked as a backend developer using Django and Django REST Framework. I built and maintained RESTful APIs, designed database models with PostgreSQL, implemented JWT authentication, integrated third-party services, optimized queries, and wrote unit tests with pytest. Collaborated closely with the frontend team to deliver clean, scalable, and well-documented backend features for a production web application.

Sparks Foundation

01-Jan-2024 - 01-Feb-2024

During a one-month intensive full-stack internship, I engineered a functional banking application from the ground up, focusing on core web fundamentals without reliance on heavy frontend frameworks. I utilized vanilla HTML, CSS, and JavaScript to craft a responsive and interactive user interface, ensuring a seamless user experience. On the backend, I implemented Express.js to architect robust RESTful APIs, managing server-side logic and data flow. This project honed my ability to bridge the gap between client-side design and server-side functionality within a tight deadline.

Datapulse - FullTimeJob

01-May-2025 - 28-Feb-2026

As a Full Stack Developer, I have engineered scalable web solutions by leveraging a diverse technology stack that bridges complex backend systems with high-performance user interfaces. I specialized in building responsive frontends using React and Next.js, ensuring optimized rendering and user engagement. On the server side, I demonstrated adaptability by architecting robust APIs and microservices across multiple environments—utilizing Spring Boot for enterprise-grade Java applications, Flask for lightweight Python services, and Laravel for rapid PHP development. This polyglot approach allowed me to select the right tool for each architectural challenge, driving efficiency and system reliability.

FINAL YEAR PROJECT

QeFi - Postquantum Resistant Blockchain System for Enterprise

QeFi is a next-generation blockchain infrastructure engineered specifically to address the security challenges of the quantum era. By implementing advanced post-quantum cryptographic primitives, the system secures enterprise-grade transactions against the decryption capabilities of future quantum computers, ensuring long-term data immutability. The architecture is further fortified by a continuous AI monitoring layer, which leverages machine learning algorithms to detect network anomalies, audit smart contracts in real-time, and proactively mitigate security threats before they escalate. This convergence of quantum-resistant ledger technology and intelligent oversight provides institutions with a resilient, future-proof framework for high-value financial operations.

TECHNICAL EXPERTISE

Frontend development

Experienced in React, Next and VueJs. Along with styling frameworks such as tailwind, bootstrap and ShadCn

Backend Development

Experienced in Django, ExpressJs, Java Springboot and Laravel

Database design

Worked with MongoDB, Firebase, PostgreSQL and MySQL



Muhammad Muzamil Kaleem

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PROFESSIONAL PROFILE

Dedicated Software Developer and 8th Semester BS Computer Science student at NUST, Islamabad. Experienced in building scalable data extraction systems and full-stack web applications using Python, Next.js, and Flask. Proven ability to automate workflows and integrate AI solutions to enhance process efficiency and user engagement.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.48 (2022)

INTERNSHIP EXPERIENCE

vFairs

05-Jun-2025 - 08-Aug-2025

Developed scalable data extraction systems, maintaining two Python repositories with 60+ web scrapers built with Selenium, Scrapy, and BeautifulSoup, containerized and deployed on AWS. Contributed to the full-stack development of internal data-cleaning tools using Laravel and Flask to enhance database integrity and ensure SOC 2 compliance. Built n8n workflows to automate internal processes and data pipelines, and integrated AI chatbots into vFairs' virtual events to improve attendee engagement and support automation.

FINAL YEAR PROJECT

Finasaan

Finasaan is a financial literacy app designed to help users in Pakistan better understand and manage their personal finances. The app focuses on five key areas: stock market, mutual funds, insurance, taxation, and budgeting. It collects real-time financial data from public sources and uses AI to extract, summarize, and explain this information alongside the company's financial reports in simple terms, based on the user's experience level. Key features include a chat-based assistant, personalized insights, and educational content aimed at making financial concepts easier to grasp for everyone from beginners to more experienced users.

TECHNICAL EXPERTISE

Full-Stack Development & Data Automation

Proficient in full-stack software development and data engineering with a strong command of Python, Java, C, C++, and JavaScript. Experienced in building scalable web applications and internal tools using Next.js, Express.js, Flask, and Laravel, supported by robust database management in MySQL, PostgreSQL, Mo ...



Muhammad Fahad

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PROFESSIONAL PROFILE

Frontend-focused Computer Science undergraduate at NUST with hands-on experience in React-based web development. Proficient in building modern, responsive interfaces using React, Next.js, Tailwind CSS, and JavaScript, with a strong emphasis on component reusability, state management, and UI performance. Experienced in cross-platform mobile application development using Flutter and familiar with full-stack development through the MERN stack (MongoDB, Express.js, React, Node.js), enabling effective collaboration between frontend and backend systems. Passionate about crafting user-friendly digital experiences and continuously refining skills through real-world projects and self-driven learning.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science (SEECS), Islamabad, 2.4 (2026)

INTERNSHIP EXPERIENCE

Al-Raheem Technologies (Pvt.) Ltd.

27-May-2025 - 25-Aug-2025

Developed a full-fledged Advocate / Law Firm Website with responsive front-end and secure back-end features. Implemented case management, appointment scheduling, document handling, and client interaction modules. Integrated databases, authentication mechanisms, and role-based access control. Optimized website performance, scalability, and security. Collaborated in a professional development environment and followed best coding practices.

FINAL YEAR PROJECT

Presence+ — Smart Bluetooth-Based Enhanced Attendance System

Presence+ is a smart attendance management system that automates attendance using Bluetooth-based proximity detection. The system minimizes manual intervention and proxy attendance by verifying the physical presence of users within a defined range. It consists of separate Teacher and Student applications, enabling secure, real-time attendance marking and synchronization. The solution emphasizes scalability, reliability, and secure communication, making it suitable for academic and institutional environments.

TECHNICAL EXPERTISE

MERN Stack Web Development

Design and development of scalable web applications using MongoDB, Express.js, React.js, and Node.js. Experienced in building secure, responsive systems with authentication, dashboards, and role-based access control.

Front-End Engineering & UI Systems

Strong expertise in React, Next.js, and Tailwind CSS with a focus on component-based architecture, performance optimization, and mobile-first UI/UX design.

Mobile App Development (Flutter)

Cross-platform application development using Flutter and Dart. Experienced in building production-ready apps with Firebase Authentication, real-time data sync, and API integrations.

Database Engineering & Data Handling

Experience with MongoDB, MySQL, Firebase, and Supabase. Proficient in schema design, CRUD operations, indexing strategies,

and secure data storage workflows.

Software Development Tools & Project Management

Experienced with industry-standard tools including Jira, GitHub Projects, and Agile workflows for sprint planning, issue tracking, and team collaboration.

Applied Machine Learning & AI Tools (Foundational Level)

Basic-to-intermediate experience with ML models and pipelines, including computer vision tasks such as object detection and image enhancement. Introductory experience with LLM-powered features such as CV parsing and ranking using embeddings and retrieval-based workflows. Applied as supporting functionality in ...

Deployment, Hosting & DevOps Tools

Experience with deploying web and backend applications using CI/CD pipelines and cloud hosting platforms such as Vercel and Firebase. Familiar with environment configuration, build processes, and managing production-ready deployments for web and API- based systems.



Shanza Ali

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PROFESSIONAL PROFILE

Computer Science undergraduate at NUST with strong experience in full-stack web development, machine learning, and human-centered system design. Skilled in building scalable, real-time applications using React, Next.js, and the MERN stack, with hands-on experience integrating deep learning models for real-time analysis and feedback systems. Actively involved in research-driven projects exploring adaptive interfaces, productivity tools, and intelligent systems. Proven ability to work in collaborative environments, lead small teams, and translate complex technical ideas into practical, user-focused solutions.

EDUCATION

Bachelor of Science in Computer Science (BSCS)

School of Electrical Engineering and Computer Science (SEECS), Islamabad, 3.26 (2026)

INTERNSHIP EXPERIENCE

Research Solutions and Ventures (RESOLVE)

16-Jun-2025 - 16-Aug-2025

Worked on a POC Retrieval-Augmented Generation (RAG) Chatbot over a SQL Database, contributing to data integration, model workflow setup, and iterative testing.

Humanity Alliance Organisation (HAO)

21-Jul-2024 - 21-Sep-2024

Worked as an intern within a collaborative development team, focusing on building responsive and interactive web applications using React.js.

Bluediamond AI Engineering

16-Jun-2024 - 16-Aug-2024

Worked as an intern to design and develop the frontend architecture for a web project using React.js. Tasks included creating mockups on figma and then converting them into react code.

FINAL YEAR PROJECT

MORPHE - Adaptive Interfaces for Productivity Software

MORPHE is a research-driven final year project focused on improving developer productivity through adaptive user interfaces. The system analyzes real-time user behavior and attention signals, including typing patterns, undo actions, navigation events, and eye-tracking data, to infer user context during development tasks. Built as a modular prototype within Visual Studio Code, MORPHE applies rule-based interface adaptations that dynamically adjust interface complexity, highlight relevant tools, and suggest workflow optimizations. The project evaluates how interface adaptivity can reduce cognitive load, enhance focus, and lay the groundwork for future intelligent, personalized developer tools.

TECHNICAL EXPERTISE

Full-Stack Web Development

Experienced in designing and building scalable, responsive web applications using React, Next.js, Node.js, MongoDB, and Redux. Skilled in component-based architecture, state management, RESTful APIs, and real-time features using Socket.io, with a strong focus on performance and usability.

Machine Learning & Deep Learning Systems

Hands-on experience developing and integrating machine learning and deep learning models using Python and PyTorch, including CNN- and LSTM-based architectures for emotion recognition and real-time analysis. Familiar with model evaluation, inference pipelines, and deploying ML models within interactive applica ...

Frontend Architecture & UI/UX Design

Strong foundation in frontend architecture and user interface design, with experience using React, Figma, and wireframing tools. Focused on creating intuitive, accessible, and user-centered interfaces, following modern design principles and mobile-first practices.

Interactive Simulation Development

Experience developing interactive simulations using Unity and C#, including state-based systems, validation logic, and user training workflows. Skilled in designing modular components and intuitive interfaces for educational and simulation-based applications.



Kaif Ul Imaan

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PROFESSIONAL PROFILE

Final year Computer Science student at the **National University of Sciences and Technology (NUST)**, Islamabad (H-12), specializing in **Artificial Intelligence** with a strong academic foundation in machine learning, deep learning, and large language models. Experienced in end-to-end data analysis, computer vision applications, and modern retrieval-augmented generation (RAG) systems, leveraging tools such as PyTorch, Pandas, PySpark, and Databricks to derive actionable insights from complex datasets and drive informed decision making.

Currently developing a final year project ~~on automated disease detection from microscopic cell images, targeting cross-modality generalization across tissue histopathology and blood smear microscopy~~. The work combines an in-depth review of state-of-the-art AI models and medical imaging platforms with hands-on experimentation using Hugging Face based PyTorch architectures, and extends to end-to-end system design including **GPU accelerated training, cloud deployment on AWS, FastAPI based backend inference** services, temporary file storage pipelines, and **explainable AI outputs** tailored for clinician-friendly diagnosis. Eager to apply both **theoretical knowledge and practical skills** to challenging problems in AI research and industry, while continuing to expand expertise in emerging technologies and real-world applications.

EDUCATION

Bachelors in Computer Sciences

School of Electrical Engineering and Computer Sciences (SEECS), NUST, Pakistan. , Islamabad. , 2.93 (2026)

INTERNSHIP EXPERIENCE

Ministry of Planning, Development and Special Initiatives Pakistan

21-Jul-2025 - 01-Sep-2025

Designed and implemented a deep learning-based Signature Detection and Verification System, utilizing YOLO for automatic signature detection from PDF documents and Siamese Networks for signature authenticity verification, forming an end-to-end computer vision pipeline for localization and similarity matching. Gained hands-on experience with LangChain and LangGraph to develop Retrieval-Augmented Generation (RAG) systems, including exposure to modern and modular RAG architectures, and explored LLM tool integration and agentic workflows for reasoning over external knowledge sources and structured tools.

Cyberisk

03-Jun-2024 - 30-Aug-2024

I worked on data analytics and ETL pipelines using Python libraries, managed cloud resources through the AWS Console, and performed data processing and analysis with PySpark on Databricks.

FINAL YEAR PROJECT

Automated Disease Detection Using Microscopic Cell Images for Cross-modality generalization across two microscopy domains (tissue histopathology and blood smear microscopy) Automated Disease Detection Using Microscopic Cell Images for Cross-modality generalization across two microscopy domains (tissue histopathology and blood smear microscopy)

This project tackles the challenge of cross-modality generalization in medical microscopy, bridging two distinct diagnostic domains: histopathology and hematology, across both standard microscopic images and whole-slide images. We leveraged Hugging Face-based foundation models that were pretrained specifically on microscopy data to establish a strong starting point. Our approach unfolded in three phases. In Phase I, we applied self-supervised domain adaptation using a DINOv2 student-teacher framework, allowing the model to learn robust representations from our datasets without requiring labeled data. This step was crucial for building

domain-specific understanding while maintaining generalizability. Phase II involved fine-tuning the adapted teacher model in a supervised manner with three specialized diagnostic heads: (i) region identification to locate areas of interest, (ii) binary classification to distinguish normal from abnormal regions, and (iii) abnormality stage identification to categorize the severity of detected pathological regions. In Phase III, we implemented an attention-based Multiple Instance Learning (MIL) network that intelligently prioritizes diagnostically significant patches while filtering out less informative areas. This mimics how clinicians naturally focus on relevant tissue regions during examination. The system was designed with explainability at its core, producing interpretable outputs that enhance user trust and diagnostic reliability. Our goal was to replicate a clinician's step-wise diagnostic reasoning process within a unified platform that works seamlessly across both histopathology and hematology applications. Training and deployment considerations : Model training requires high-performance GPU resources, which are provided by DFKI. For deployment, the system is designed to run on cloud infrastructure such as AWS, with scalable storage to temporarily store image tiles processed by the model. A user-friendly front end interfaces with the backend through FastAPI calls to the model and explainability pipeline, enabling clinicians to receive interpretable, reliable, and intuitive diagnostic outputs for practical clinical use.

TECHNICAL EXPERTISE

Natural Language Processing & Large Language Models

Proficient in building intelligent applications by integrating large language models with external tools and knowledge sources. Experienced in developing modern retrieval-augmented generation (RAG) systems that combine LLM reasoning with dynamic information retrieval for context-aware responses. Skilled in pr ...

Computer Vision & Image Processing

Adept at applying state-of-the-art deep learning architectures to tackle complex visual recognition tasks, including object detection, image classification, and medical image analysis. Hands-on experience with OpenCV for image preprocessing, enhancement, and segmentation. Proficient in working with convolutio ...

AI Development Frameworks & Orchestration

Proficient in modern AI development tools including LangChain for building RAG-based LLM applications and LangGraph for creating traceable, multi-agent workflows with transparent reasoning paths. Experienced with Model Context Protocol (MCP) for standardized tool integration and context management. Skilled in ...

Cloud Computing & Data Infrastructure

Experienced in leveraging AWS services for model deployment, scalable data storage, and cloud-based workflows. Skilled in using Databricks for large-scale data analysis, collaborative development, and distributed computing with PySpark. Capable of designing end-to-end pipelines that integrate data engineering ...



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PROFESSIONAL PROFILE

Full-stack web developer with experience in **Next.js, React, Vue, Node.js**, and cloud-based architectures on **AWS**, including **ECS, Lambda, RDS, DynamoDB, S3, and CloudFront**.

EDUCATION

Bachelors in Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.05 (2026)

INTERNSHIP EXPERIENCE

Zaytrics Pvt Ltd

03-Jun-2024 - 02-Sep-2024

Engineered frontend and backend components using MERN/PERN Stack, ensuring seamless integration and scalability. • Designed and developed 80% of the frontend for a Saudi Arabian client's dashboard, enhancing UI/UX under the mentorship of a senior Full Stack Developer. • Enhanced problem-solving and analytical skills, debugging and troubleshooting issues to maintain a high-performing application.

CVision

01-Apr-2025 - 06-Oct-2025

Along with other products, I worked on Bizmila, a Next.js-based web application designed to help founders validate startup ideas through evidence-driven insights, user feedback, and real-world problem testing. The platform integrates a Node.js backend with a Python-based AI service leveraging OpenAI and Gemini APIs to deliver intelligent idea assessments, progress tracking, and investor-readiness insights, enabling entrepreneurs to move from assumptions to clarity and product-market fit.

Recce.site

01-Sep-2025 - 22-Jan-2026

Worked on a freelance basis to build a production-grade admin panel for their mobile application, enabling stakeholders to monitor user activity, analytics, and operational metrics. Also developed a separate business website integrated with a headless CMS (Strapi) to manage dynamic content independently of the core application. The solution is fully deployed on AWS, with the business website hosted on AWS Amplify and the headless CMS running on an EC2 instance. The mobile application and admin panel leverages DynamoDB as the primary database, with PostgreSQL synchronized via DynamoDB streams, using AWS Lambda and SQS to support efficient querying, searching, and pagination.

Research, Innovation & Commercialisation (RIC) NUST - Social Entrepreneurship Bootcamp

03-Jul-2023 - 04-Sep-2023

Collaborated with a multidisciplinary team from different departments of NUST to design a social entrepreneurship venture, developing a complete business model, functional prototype, and pitch. Our team won the pitch competition by proposing an innovative solution to the dead-stock problem faced by fast-fashion brands. Additionally, organized and hosted interactive Zoom sessions with entrepreneurs from diverse industries, enabling students to gain exposure to real-world entrepreneurial challenges.

FINAL YEAR PROJECT

Agentic AI for Dynamic Public Space Threat Prediction

Public space security remains a critical challenge in Pakistan, with urban areas experiencing over 500,000 incidents of public disorder annually, including fights, loitering, and crowd panic, while detection rates in existing CCTV systems average below 35% due to

human fatigue and limited AI integration [14]. This proposal presents an innovative AI-powered prototype that addresses these gaps through an agentic AI system with modular threat detection. The platform targets four key threats: fight/aggressive behavior, abandoned luggage detection, weapon detection, and crowd panic. It incorporates a Small Language Model (SLM like DistilBERT) for generating contextual alerts and handling user queries, and text-to-speech (TTS via gTTS/pyttsx3) for real-time warnings.

TECHNICAL EXPERTISE

Full-Stack Web Development

Design and development of end-to-end web applications using Next.js, React, Vue.js on the frontend and Node.js with Express on the backend, focusing on scalable, maintainable, and production-ready systems.

Cloud & AWS Architecture

Hands-on experience deploying and managing applications on AWS, including Amplify, EC2, ECS, Lambda, S3, CloudFront, RDS, CloudFormation, SQS, and OpenSearch, with an emphasis on scalability, security, and cost efficiency.

Backend Engineering & APIs

Development of RESTful APIs and backend services using Node.js and Python, handling authentication, business logic, integrations, and data pipelines for web and mobile applications.

Database Design & Data Engineering

Experience working with DynamoDB, PostgreSQL, and MongoDB, including DynamoDB Streams to PostgreSQL synchronization using AWS Lambda and SQS for efficient querying, searching, and pagination.

Headless CMS & Content Architecture

Development of headless CMS solutions for managing dynamic content, decoupled from business websites and applications, enabling flexibility and independent content updates.

DevOps & Deployment Practices

Experience with CI/CD workflows, environment management, and infrastructure automation using AWS Amplify and CloudFormation, ensuring smooth deployments and consistent environments.

System Design & Architecture

Designed multi-service architectures involving separate business websites, admin panels, and CMS systems, with clear data flow, synchronization, and scalability considerations.



Muhammad Ammar Bin Akram

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PROFESSIONAL PROFILE

Aspiring computer vision and deep learning engineer with hands-on experience in developing AI systems for real-world applications, including automated snooker scoring and mango detection. Skilled in Python, OpenCV, PyTorch, TensorFlow, and YOLO, with experience in deploying models on edge devices like Raspberry Pi. Seeking opportunities to apply technical expertise to innovative projects in computer vision and AI, while continuing to grow in advanced deep learning and real-time system development.

EDUCATION

Bachelors of Science in Computer Science

School of Electrical Engineering and Computer Science , Islamabad , 3.35 (2022)

INTERNSHIP EXPERIENCE

DataQuartz

23-Jun-2025 - 18-Aug-2025

Worked on the Snooker Vision Project, focused on automating the complete snooker game using deep learning and computer vision, Developed features for player turn management and real-time score calculation, Implemented foul detection logic based on ball interactions and shot analysis , Designed potting detection mechanisms for accurate game event tracking

RoadGauge

11-Aug-2025 - 31-Oct-2025

Worked on tracking road assets using advanced computer vision models, Contributed to the development of an automated road inspection system, Applied 2D image processing techniques for visual analysis of road conditions, Utilized deep learning models to improve detection and tracking accuracy

FINAL YEAR PROJECT

ExportEdge AI

Designed and implemented an edge-AI solution to automate mango quality inspection and export decision-making. The system uses deep learning for mango classification and disease segmentation, combined with an LLM (RAG-based) to recommend optimal export prices and destination countries, deployed on Raspberry Pi.

TECHNICAL EXPERTISE

Computer vision and Deep learning

Experienced in designing and implementing computer vision systems for real-world applications, including object detection, image classification and segmentation, tracking, and automated inspection. Skilled in using Python, scikit-learn, numpy, pandas, OpenCV, PyTorch, TensorFlow, and YOLO for developing AI so ...



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PROFESSIONAL PROFILE

I am a final year student at NUST pursuing my bachelors in Computer Science. I have expertise in deep learning, computer vision , LLMs, RAG and AI agents,

EDUCATION

BSCS

SEecs , Islamabad , 2.97 (2022)

INTERNSHIP EXPERIENCE

Pipeline Scientists

26-Jun-2025 - 26-Sep-2025

- Developed a context aware "Reddit Brand Ambassador" for ColdSend.pro that helps people and pitches the product in relevant threads.
- Developed a Reddit blog posting automation connected with the RSS feed of product's website.
- Developed Youtube comment posting automations to increase the reach of the product.

FINAL YEAR PROJECT

LiteDoc: Distilling large document models into task specific encoders.

* Working on the distillation of Deepseek VL-2 as part of my FYP. * Pruning Experts present in the MOE layer based on the CKA similarity of the experts then using knowledge distillation to increase the pruned model's performance. * "Using DocVQA and FUNSD to test the model's performance and ANLS score as an evaluation metrics.

TECHNICAL EXPERTISE

LLMs

* Developed a Local RAG-Based Financial Education Chatbot: Implemented a Retrieval-Augmented Generation (RAG) system utilizing vector databases (Chroma) and Large Language Models (LLMs) to provide instant, contextually relevant answers to financial queries based on curated educational content. * Optimized ...



Abdullah Naeem

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PROFESSIONAL PROFILE

I'm an AI Engineer and Full Stack Developer with a deep focus on ML and

I'm an AI Engineer and Full Stack Developer with a deep focus on ML and LLMs, backed by a strong foundation in C++ and Python. I love tackling complex logic whether that's building PDDL based planners, optimizing engines or developing computer vision tools like facial recognition and handwriting based gender prediction. I'm also a seasoned MERN stack developer, which means I can take those intelligent models and turn them into fully functional, scalable web products

EDUCATION

Bs in computer science

Seecs , Islamabad , 2.58 (2026)

INTERNSHIP EXPERIENCE

SiberKoza

01-Jul-2025 - 30-Sep-2025

Work on the LLM in the field of PDDL(a language used to give instructions to a robotic machine)

FINAL YEAR PROJECT

Sehatyab

Sehatyab is a next generation healthcare platform that brings professional medical care directly to your door by using GPS to connect patients with doctors available in their specific sector for urgent house calls. Beyond physical visits and online consultations the app features a sophisticated dual AI system one model analyzes your symptoms to recommend the most qualified specialist for your needs while the second acts as a safety layer by validating the doctors prescription to ensure it perfectly matches your diagnosis. By merging on demand home visits with intelligent medical oversight Sehatyab makes healthcare both incredibly convenient and significantly safer.

TECHNICAL EXPERTISE

Ai | ML engineer

Experience in AI | ML | LLM Created many projects related to these Plus a full stack web developer (MERN) A part time free lancer
High experience of C++,Python



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PROFESSIONAL PROFILE

I'm a full-stack web developer with a focus on building scalable, modern applications. My core expertise lies in the MERN stack, Next.js, and Supabase, but I also enjoy working across different technologies as projects demand. I am always motivated to optimize dev workflows that improve DX and team velocity.

In my current role, I manage products, ensuring they are scalable and bug-free. I handle multi-environment setups, deliver features and fixes quickly without breaking production, and oversee AWS infrastructure, domains, deployments, and CI/CD pipelines end-to-end.

Beyond work, I enjoy improving my skills in Golang and cloud infrastructure (AWS) in my free time. I'm always curious about new technologies and approaches that make teams faster and products more reliable.

EDUCATION

BSCS

School of Electrical Engineering and Computer Science , Islamabad , 3.55 (2026)

INTERNSHIP EXPERIENCE

BrainBox Automations

01-Apr-2025 - 29-Jan-2026

- Set up robust CI/CD pipelines for automated testing and deployment processes.
- Managed AWS deployments and infrastructure optimization for production environments.
- Deployed background workers executing scheduled jobs (via CRON) that track progress in DynamoDB and poll Meta Ads API for status updates.
- Built scalable applications using Next.js, Redux, and Supabase for comprehensive full-stack development.
- Built centralized and structured logging infrastructure for complete transaction traceability, error monitoring, and audit compliance in a fintech application.
- Developed Stripe subscription and trial management systems, handling various payment scenarios and user lifecycle management.
- Built Cloudflare Workers acting as secure proxies for third-party paid service APIs with dynamic credential management.
- Created Slack bots using the Slack API for automated team workflows.

Infinity Beyond

01-Sep-2024 - 01-Mar-2025

- Developed a hospital administration platform using Flask, React, AWS, Redis, and Docker.
- Implemented complex spreadsheets on the frontend with cross-page data matching, custom views, and advanced validation rules.
- Built dynamic data visualizations and interactive graphs to analyze administrative data trends.

Victreat

01-Jun-2024 - 01-Sep-2024

- Developed victreat.com website using Next.js.
- Scraped 500,000 documents from medical websites.

Adept Tech Solutions

01-Sep-2023 - 01-Dec-2023

Built Frontend pages in Angular and integrated with APIs.

FINAL YEAR PROJECT

Elevate AI

AI based leads finding from a DB of real people having data about education, employment history, Bio, recent posts, etc.. We take a product description, generate an Ideal Customer Profile and match it with our DB to find top 300 most likely people to buy the product. We send email, track opens, track conversations (using a CRM), conversions, etc.

TECHNICAL EXPERTISE

Cloud & AWS Infrastructure

Proficient in deploying and managing applications on AWS (EC2, Lambda, S3, SQS, API Gateway, DynamoDB). Experienced in optimizing infrastructure, ensuring reliability, and handling production workloads.

Full-Stack Web Development

Expert in building end-to-end web applications using Next.js, React, Node.js, and Supabase. Skilled in designing scalable architectures, implementing secure APIs, and delivering high-performance user experiences.

Backend Systems & Distributed Processing

Skilled in building background workers, event-driven systems, and queue-based architectures using SQS, CRON jobs, and WebSockets. Designed systems for high availability and real-time processing.



Muhammad Ali Tahir

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PROFESSIONAL PROFILE

I am a Computer Science major with a strong academic foundation in Artificial Intelligence, Machine Learning, Deep Learning, and Computer Vision, combined with practical experience building real-world AI and automation systems. I specialize in designing end-to-end workflows that integrate custom GPTs, AI model pipelines, cloud-based GPU environments, and platform APIs to automate content generation, video creation, and social media publishing at scale. My work includes configuring and optimizing AI inference environments (ComfyUI, SwarmUI, RunPod), developing script-to-video automation pipelines, and implementing reliable API-driven solutions using tools like Google Apps Script, webhooks, and YouTube APIs. I focus on production-ready systems that prioritize realism, performance, and maintainability, bridging academic AI knowledge with practical deployment and automation.

EDUCATION

Bachelors in Computer Science

SEECs , Islamabad , 3.2 (2026)

INTERNSHIP EXPERIENCE

INTELGENCY IT Solutions

01-Jun-2023 - 31-Aug-2023

- Developed machine learning models for client projects and data analysis
- Collaborated with the development team on AI-driven solutions
- Gained hands-on experience in model deployment and optimization

Nokia

01-Jul-2025 - 30-Sep-2025

AI/ML Intern - On Site

Alcatel-Lucent Enterprise

01-Jul-2025 - 30-Sep-2025

Networking Intern - On Site

EHS Operational Excellence

15-Jan-2026 - 01-Jan-2027

Part-Time Freelance Job Continued

FINAL YEAR PROJECT

Super App - Connecting Home Owners and Service Providers

I am working on an app that will connect the Home Owners and Service Providers. The app will have a bidding model where Home Owners can post quick Technical Jobs like Plumber, Electrician, and other technicians, and the Service Providers can bid on these jobs and work on them.

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Strong foundation in supervised and unsupervised learning, model evaluation, and practical AI system design, backed by academic coursework and applied implementation.

Deep Learning

Hands-on experience with neural networks, CNNs, and transformer-based models for vision and language tasks, including training, fine-tuning, and inference optimization

Computer Vision

Practical and academic experience in image and video processing, object detection, realism-focused generation, and vision-based AI pipelines.

Natural Language Processing (NLP)

Expertise in prompt engineering, custom GPT development, text generation, summarization, and integrating LLMs into automated workflows.

AI Automation & Workflow Orchestration

Design and deployment of end-to-end automated pipelines combining AI models, APIs, webhooks, and schedulers for scalable, hands-off execution.

API Integration & System Integration

Experience working with REST APIs (YouTube, Google APIs, AI platforms), authentication, data flow design, and reliable system-to-system communication.

Cloud & GPU-Based AI Deployment

Setup and optimization of GPU-powered AI environments using platforms like RunPod, including environment configuration, dependency management, and performance tuning

Generative AI (Image & Video)

Development of script-to-image and script-to-video pipelines using AI generators, with a focus on realism, motion consistency, and production-quality output.

Python & AI Tooling

Proficient in Python for AI development, automation scripts, data processing, and integration with AI frameworks and external services.

System Design & Production Readiness

Ability to translate requirements into stable, maintainable AI systems with clear milestones, testing strategies, and deployment considerations.



Aamna Khan

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PROFESSIONAL PROFILE

Computer Science student with a strong foundation in software development, data analysis, and machine learning. Demonstrated ability to design, build, and deliver project-driven solutions using modern tools and frameworks. Brings an analytical, detail-oriented, and adaptable approach, and is well-positioned to contribute in internship or entry-level technical roles.

EDUCATION

BSCS

SEECs, Islamabad, 2.94 (2026)

INTERNSHIP EXPERIENCE

AIOTAC

04-Aug-2025 - 04-Oct-2025

Delivered frontend features for a real-world client website revamp in the event rental services domain, using React. Translated client and design requirements into responsive, production-ready UI components. Collaborated with designers and backend developers to ensure usability, consistency, and performance across the site. Enhanced layout structure and responsiveness to meet professional and client-facing standards.

FINAL YEAR PROJECT

Memora-Voice First Assistant

Developing a voice-first AI assistant aimed at improving task management and prioritization for individuals with ADHD, targeting reduction in missed tasks and improved daily productivity. Implementing real-time speech-to-text transcription and NLP-based task extraction, achieving structured classification of tasks by urgency and importance. Following an iterative, user-centered design approach: conducting user testing, feedback integration, and performance optimization to enhance usability and accessibility. Leveraging Python, Flutter, and ML frameworks to create an adaptable, hands-free interface capable of tracking and organizing multiple tasks simultaneously.

TECHNICAL EXPERTISE

Programming & Scripting

Python, JavaScript, Java

Frontend Development

React, HTML5, CSS3

Data & AI

Machine Learning, NLP, Speech-to-Text, Data Analysis (Pandas, NumPy), TensorFlow, Scikit-learn

Tools & Workflow Description

Git/GitHub, VS Code, UI/UX Design, Agile Workflow, Problem-Solving



Muhammad Zikrullah Rehman

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PROFESSIONAL PROFILE

Computer Science undergraduate at NUST (CGPA 3.64/4.00) with strong hands-on experience in deep learning, explainable AI, and biomedical signal analysis. Proven researcher with work spanning EEG interpretability, remote physiological measurement (rPPG), and physics-informed neural networks for real-time 3D brain source localization. Former AI Engineer at CVision, contributing production-level agentic AI systems and technical research briefings. Submitted research in XAI and document analysis, with international research exposure at Zhejiang University. Technically versatile across modern ML stacks, signal processing, and full-stack AI systems, with a strong focus on building interpretable, high-impact intelligent systems.

EDUCATION

Bachelors in Science, Computer Science

SEECs , Islamabad , 3.64/4.00 (4)

INTERNSHIP EXPERIENCE

CVision

01-Apr-2025 - 31-Oct-2025

AI Engineer Islamabad, Pakistan – Promoted from research/analyst intern to part-time AI Engineer based on strong performance and technical contributions. – Designed and implemented AI agentic backend components, improving feature performance in company products. – Conducted comparative analyses of multiple backend features in clients' web apps, recommended the optimal solutions. – Authored clear, concise technical briefing documents complete with flow diagrams, written explanations, and references to accelerate the dev team's ramp-up on new features. – Researched and distilled emerging AI trends into briefs, producing LinkedIn infographics and posts that boosted company page engagement by 247%.

Zhejiang University

30-Jul-2025 - 29-Aug-2025

Research Intern Hangzhou, China – Investigated deep learning approaches for remote photoplethysmography (rPPG) from video, focusing on robustness under varying illumination and motion conditions. – Implemented and benchmarked State-of-the-art spatiotemporal neural architectures designed for physiological signal extraction on different versions of rPPG datasets. – Conducted extensive experimentation, analyzing performance trends and extracting insights from evaluation metrics to identify strengths, weaknesses, and patterns in different model families.

TUKL-NUST R&D Center

03-Jun-2024 - 28-Feb-2025

Research Intern Islamabad, Pakistan XAI Interpretability for EEG Classification: – Conducting research on explainable AI (XAI) algorithms such as SmoothGrad, Deep Taylor Decomposition, and Occlusion Sensitivity to make EEG classification models interpretable. – Evaluating the performance of these algorithms relative to a base EEG classification model. – Investigating the computational efficiency and localization capabilities of these XAI techniques. – Utilizing localization information from XAI algorithms to create an ensemble of Support Vector Machine (SVM) regression models, each trained on data generated by individual XAI methods, enhanced predictive performance by 34.1%. – Pioneered a new XAI method for EEG classification using wavelet features which improved upon previous SOTA methods – Findings have been compiled into a research paper and submitted to ISBI 2026. Urdu Ligature Recognition: – Developed a deep learning-based system using a CNN and a GRU to recognize Urdu language ligatures captured through a digitizer tablet. Recognized the ligatures with an accuracy of 97.6% – Evaluated the impact of handwriting features like pressure, tilt, and stroke direction on the recognition performance. – The demonstration was presented at the 16th International Workshop on Document Analysis Systems (DAS 2024), held in Athens, Greece, and was highly appreciated by the research community. Gaze based annotation of EEG files for training Deep Learning based classifier: – Replicated the results of a

research paper that used deep learning and the braindecode machine learning library to classify EEG readings from publicly available datasets as normal or abnormal. – Developed a gaze tracking-based annotation system for doctors to use on the annotation of EEG datasets to streamline the data labeling process for future researchers.

Digital Miles

01-Mar-2024 - 31-May-2024

Innovation Intern (Remote) Islamabad, Pakistan – Conducted market research and product testing for a Bill & Melinda Gates Foundation-funded fintech startup – Launched an MVP lifestyle app to improve financial convenience across Pakistan's university ecosystem. – Designed graphics for social media and marketing collateral, enhancing brand recognition and recall.

FINAL YEAR PROJECT

Inverse EEG-Based 3D Brain Mapping for Early Neurological Disease Detection

Neurodegenerative disorders such as Alzheimer's disease (AD) and Parkinson's disease (PD), as well as epileptic seizures, manifest distinct electrophysiological signatures that may enable earlier diagnosis if captured noninvasively. We propose a general-purpose neural inverse-solver that reconstructs three-dimensional brain activity from scalp EEG in real time, highlighting disease-specific patterns (e.g., AD-related alpha slowing and PD-related beta bursts) without resorting to separate pipelines per disorder. The approach leverages physics-informed neural networks (PINNs) to incorporate biophysical forward models into training, and uses Explainable AI (SmoothGrad saliency maps) to overlay interpretable heatmaps on the AR/VR visualizations. Because true brain sources cannot be measured directly in patients, the system is trained entirely on realistic simulated EEG (using head and source models that embed known AD/PD/epilepsy biomarkers) and validated against available data (e.g. seizure annotations in TUSZ or PET/EEG correlations in ADNI). In all three disorders the lack of ground-truth source data mandates simulation-based training and the use of multi-modal datasets for outcome validation, rather than direct training supervision. We retain a real-time 3D AR/VR playback interface of the reconstructed cortical and subcortical activity, with XAI overlays showing input significance. Our goals are to demonstrate that a single neural inverse solver can accurately localize generalized brain activity while being sensitive to disease-specific EEG features.

TECHNICAL EXPERTISE

Deep Learning & Neural Architectures

Design and training of CNNs, RNNs (LSTMs, GRUs), 3D U-Nets, and spatiotemporal models for vision, time-series, and biomedical data. Experienced in benchmarking state-of-the-art models and optimizing performance across real-world constraints.

Full-Stack AI Development

Integration of ML backends with React frontends, APIs, databases, and deployment tools. Comfortable shipping end-to-end intelligent products.

AI Systems & Agentic Architectures

Design of production-grade AI pipelines using LLMs, RAG, workflow graphs, and GPU-optimized inference. Built fault-tolerant multi-stage systems for real-time intelligent applications.

Explainable AI (XAI) for Biomedical Systems

Application of XAI methods to interpret Deep Learning models. Focused on localization, computational efficiency, and trust-aware deployment for clinical-style systems.

Computer Vision & Time-Series Modeling

Experience across vision-based recognition, physiological signal extraction, and sequential data learning. Strong understanding of feature dynamics, robustness, and evaluation methodologies.

Research, Experimentation & Technical Communication

Systematic benchmarking, ablation studies, and metric-driven model analysis. Able to translate complex technical work into clear documentation, diagrams, and research manuscripts.

EEG Signal Processing & Analysis

End-to-end pipelines for EEG preprocessing, feature extraction, classification, and inverse source localization.

Integration of physiological priors with machine learning for robust and generalizable neural decoding.

Physics-Informed Neural Networks (PINNs)

Embedding physical laws and forward models into deep learning frameworks for inverse problems. Applied to real-time 3D EEG source reconstruction using synthetic biophysical data.

Ensemble Learning & Hybrid Models

Construction of ensembles driven by XAI-derived features for performance boosting. Skilled in combining classical ML with deep learning for interpretable high-accuracy systems.



Syed Muhammad Taha Imam

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PROFESSIONAL PROFILE

Deep Learning–focused Computer Science undergraduate with hands-on research and industry experience in **Transformer architectures, model refinement, and distributed training systems**. Proven ability to improve model efficiency through **architectural optimization, parameter reduction, and scalable inference pipelines**, with experience spanning **LLMs, Vision-Language Models, RAG systems, and production-grade MLOps**. Actively engaged in research-driven development with a strong inclination toward **core DL over black-box model usage**.

EDUCATION

BSCS

School of Electrical Engineering and Computer Science , Islamabad , 3.44 (2026)

INTERNSHIP EXPERIENCE

Epistemy UK

01-Sep-2025 - 01-Dec-2025

– Led the end-to-end development of an AI tutoring platform, architecting a Nest.js backend (20+ end- points, Supabase) and a Next.js frontend. – Architected an event-driven task queue (Redis/BullMQ) to orchestrate multi-agent workflows, ensuring fault tolerance across distributed analysis pipelines. – Enforced strict SWE standards with CI pipelines and pre-commit hooks, achieving and maintaining 90%+ unit test coverage.

RapidsAI

01-Sep-2024 - 01-Dec-2024

• Integrated an RAG-based chatbot into a website using Streamlit, enhancing user engagement by 35%. • Optimized chatbot responses through Chain-of-Thought prompting, reducing incorrect responses by 50%. • Cut OpenAI API costs 50% with a multi- model query routing system. • Designed FastAPI endpoint for chatbot responses, enabling user session management and contextual interactions. • Built a Twitter scraper that processed 500+ tweets daily, enabling large-scale sentiment analysis.

CogniMind AI

01-Feb-2025 - 01-May-2025

• Deployed a dockerized Apache Airflow instance on a virtual machine, improving workflow automation efficiency by 40%. • Designed 5+ scalable DAGs in Airflow to orchestrate data pipelines, reducing manual intervention by 60%. • Developed CI/CD pipelines with GitHub Actions and Docker, cutting deployment time by 30% • Improved VLM document extraction accuracy by 20% using prompt engineering techniques • Optimized inference pipelines by 10% using parallel and batch processing techniques • Improved retrieval speed and accuracy by 10% using quantization and HNSW parameter tuning

Bradbury Lab

01-Apr-2025 - 20-Jan-2026

– Conducted a comprehensive literature review on Transformer topology and PEFT, identifying specific inefficiencies in existing weight-sharing methods. – Proposed a novel layer-merging strategy based on Tucker Decomposition, aiming to reduce parameter count without retraining – Analyzed the mathematical properties of Self-Attention blocks to demonstrate the feasibility of aligning Query (Q) and Key (K) projections for future efficient-by-design architectures.

FINAL YEAR PROJECT

LiteDoc: Distilling Large Document Models into Efficient Task-Specific Encoders.

TECHNICAL EXPERTISE

Advanced Deep Learning & AI Systems Engineering

My primary technical focus lies in core Deep Learning, particularly in model refinement, architectural innovation, and distributed training strategies. I am deeply interested in improving model efficiency and performance through architectural changes, optimization techniques, and scalable training paradigms, ...



Suman Kumari

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PROFESSIONAL PROFILE

My research focuses on applying deep learning to understand and predict complex biological phenomena. I am particularly interested in modeling high-dimensional biomedical data, such as sequencing and -omics data, physiological signals (EEG, ECG), and biophysical signals (e.g., mass spectra), to uncover mechanisms behind cell behaviour, identify biomarkers, and guide drug discovery. Ultimately, my goal is to leverage deep learning to tackle fundamental problems in biology and neuroscience.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.74 (2026)

INTERNSHIP EXPERIENCE

Machine Vision and Intelligent Systems Lab

01-Jun-2025 - 22-May-2026

- Working under Dr. Moazam Fraz and Dr. Naseer Bajwa on project "Transforming Clinical Decision-Making: Predicting Antimicrobial Resistance from MALDI-TOF Data".
- Preprocessed and performed binning on more than 300,000 mass spectra.
- Trained and evaluated multi-label species-specific 1D-CNN models on diverse species-antibiotic pairs, achieving AUPRC scores between 0.7 and 0.9 through cross-site validation and fine-tuning on external datasets, outperforming baseline methods.
- Extended the species-specific models to a single unified multi-modal model by combining the spectra and drug embeddings.
- Reviewed research papers and documentations to learn Probabilistic Deep Learning and Continual Learning for application in the project.
- Extended single model to bayesian model to estimate epistemic uncertainty.
- Manuscript for these results is under preparation.
- Extending the current work to training under continual learning paradigms and exploring strategies like replay buffer, elastic weight consolidation to adapt to evolving bacteria without catastrophic forgetting.

MITACSGlobalinkResearchInternship | YorkUniversity, Toronto, Canada

08-Jun-2026 - 31-Aug-2026

Selected for Research Project: Foundational Models for Single Cell Omics: Adapting BERT for Contextual Biological Data Analysis
Supervisor: Dr. Kaiqiong Zhao

China Pakistan Intelligent Systems Lab

25-Jul-2024 - 15-Jan-2026

Worked under Dr. Seemab Latif and Ms. Iram Tariq Bhatti on EEG-based Auditory Attention Detection; achieved 4th place out of 43 international teams in the ICASSP 2026 EEG Auditory Attention Decoding (AAD) Challenge.

FINAL YEAR PROJECT

Transforming Clinical Decision-Making: Predicting Antimicrobial Resistance from MALDI-TOF Data

Developing deep learning models for antimicrobial resistance prediction from bacterial mass spectrometry data, with uncertainty quantification and continual adaptation to emerging data.

TECHNICAL EXPERTISE

Languages

Python, C/C++, Java, Latex

Frameworks

Flask, React, Express.js, Node.js

Databases

MongoDB, MySQL

Developer Tools

Git, Docker, Kaggle, google colab, VS code, Visual Studio, Eclipse, PyCharm

Libraries

Pytorch, Tensorflow, scikit-learn, avalanche, torchbnn, numpy, matplotlib, pandas, transformers, Huggingface



Isra Mansoor

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PROFESSIONAL PROFILE

Machine Learning and AI Engineer with a strong data-driven mindset and hands-on experience across Deep Learning, Machine Learning, Data Science, and Generative AI. Skilled in building end-to-end intelligent systems, including data pipelines, predictive models, deep learning architectures, and LLM-based applications using RAG and multi-LLM frameworks. Currently contributing to a DAAD-funded Generative AI project at DFKI, Germany, delivering scalable, real-world AI solutions for personalized education. Experienced in applying machine Learning and analytics across education, healthcare, and security domains, with a strong foundation in NLP, computer vision, and full-stack AI development. Passionate about transforming complex data and advanced AI research into practical, production-ready systems with measurable impact.

EDUCATION

Bachelor of Science in Computer Science

SEecs, Islamabad, 3.54 (2026)

INTERNSHIP EXPERIENCE

Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI)

01-Jun-2025 - 01-Sep-2025

Contributed to a DAAD-funded project on advancing vocational education with Generative AI by developing adaptive learning platforms, automated assessments, and multilingual content generation. Enhanced personalization through learner history tracking and graph-based prerequisite mapping, while collaborating with NAVTTC and TEVTA to integrate scalable AI solutions into vocational institutions.

Victreat Health Tech

24-Jul-2025 - 24-Oct-2025

Collected and structured data from medical conferences, covering attendees, sessions, posters, and video content. Built automated extraction pipelines with Scrapy, Playwright, and Camoufox to process large-scale unstructured web data. Cleaned, transformed, and organized datasets for analytics and research applications.

Machine Vision & Intelligent Systems Lab (MACHVIS)

01-Jun-2024 - 01-Sep-2024

Built computer vision models for leaf disease classification, segmentation, and multi-class image recognition, using a self-compiled and curated dataset. Worked on automatic image captioning using advanced deep learning architectures.

FINAL YEAR PROJECT

Multilingual Personalized Vocational Training Using Recommendation Intelligence for Youth Empowerment

This project presents an AI-driven vocational training platform designed to address the lack of personalization, digitization, and multilingual support in Pakistan's vocational education system. The system builds detailed learner profiles capturing skill levels, preferences, and learning behavior to generate adaptive learning pathways that dynamically adjust content difficulty, depth, and delivery mode in real time. Using a shared bilingual dataset enriched through German-to-Urdu and English translation, the platform provides localized, culturally relevant training content. Large Language Models (LLMs) and Natural Language Processing (NLP) are leveraged to automate the generation of quizzes, tutorials, and microlearning modules aligned with Bloom's Taxonomy, enabling continuous assessment and personalized feedback. The system integrates intelligent recommendation algorithms and retrieval-augmented generation to optimize content sequencing and pacing, ensuring prerequisite-aware learning. Initially focused on the Auto Electrician trade and aligned with TEVTA and NAVTTC curricula, the platform is scalable to other vocational domains. Effectiveness

is evaluated through learner engagement, knowledge retention, recommendation relevance, and measurable skill improvement, contributing to inclusive, industry-aligned vocational education.

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Experienced in building intelligent systems using machine learning, deep learning, and Generative AI, including supervised and unsupervised models such as Decision Trees, Random Forests, and clustering algorithms. Strong understanding of model training, evaluation, and optimization.

Generative AI, LLMs & RAG Systems

Hands-on experience with Large Language Models, Retrieval-Augmented Generation (RAG), prompt engineering, and fine-tuning. Built scalable LLM applications using Hugging Face, LangChain, LlamaIndex, and OpenAI APIs, integrated with vector and graph databases.

Deep Learning Architectures

Proficient in designing and training CNNs, RNNs, and Transformer-based models for real-world tasks in computer vision and NLP, including classification, segmentation, sequence modeling, and generation.

Computer Vision

Developed vision-based systems using OpenCV, CNNs, and deep learning frameworks for image classification, segmentation, and multi-class recognition, including dataset compilation and preprocessing.

Natural Language Processing (NLP)

Applied NLP techniques for text generation, understanding, and multimodal tasks such as automatic image captioning, leveraging transformers and sequence models.

Programming Languages

Strong programming background in Python, C++, Java, JavaScript/TypeScript, with working knowledge of R, MATLAB, Assembly (x86) for systems-level and analytical tasks.

Frameworks & Libraries

Extensive experience with PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, and modern full-stack frameworks including Flask, Next.js, and the MERN stack.

Data Engineering & Automation

Skilled in data collection, cleaning, and pipeline development, including web scraping using Selenium, Scrapy, and Playwright, and automating workflows for large-scale data processing.

Databases & Storage Systems

Worked with vector databases, graph databases, MongoDB, and SQL-based systems to support ML pipelines, RAG systems, and scalable AI applications.

DevOps & Development Tools

Experienced with Git, GitHub, Docker, Linux, and collaborative development tools such as Slack and VS Code, enabling reproducible experiments and production-ready deployments.



Areesha Tariq

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PROFESSIONAL PROFILE

I am a Computer Science undergraduate with a keen interest in developing practical solutions that address real-world challenges through technology. I approach problems with a structured and creative mindset, translating complex concepts into actionable, user-focused outcomes. I have experience collaborating on multidisciplinary projects, managing end-to-end development processes, and quickly adapting to new tools and technologies. I am particularly passionate about innovation and applying technology to create meaningful societal and environmental impact.

EDUCATION

BSCS

SEecs, Islamabad, 2.56 (2026)

INTERNSHIP EXPERIENCE

Communication Systems and Networking (CSN) Lab

25-Jun-2025 - 25-Aug-2026

1. AI Deployment on Edge Devices: Learned how to deploy deep learning models on an NVIDIA Jetson Nano. Using TensorRT allowed optimization of inference times and achieved better latency. This will help in wildfire detection for drones and ensure operational autonomy in remote environments without cloud dependency. 2. Web Dashboard Planning: Finalized the functional requirements and wireframing for a web dashboard. Established implementation details providing a clear development blueprint for the team. 3. Drone Application Development: Initiated development of the drone's notification application, starting with the Live Satellite Map integration using Mapbox and user interface. 4. Technical Documentation: Adopted LaTeX for writing professional research papers and technical reports to ensure clear and formal documentation of the DL models we trained and research we conducted.

FINAL YEAR PROJECT

AI Powered Drone System for Real Time Fire Detection and Mitigation

This project addresses the problem of late wildfire detection and slow response in remote and hard-to-access areas. It uses AI-powered drones with onboard edge computing to detect fires early, monitor their spread, and identify trapped people or animals in real time. Satellite data and community reports are combined through a confidence system to reduce false alarms and ensure accurate alerts. The system delivers live information through web and mobile platforms, enabling faster coordination, better decision-making, and more effective wildfire mitigation.

TECHNICAL EXPERTISE

Full-Stack Developer

Full-Stack Developer & Tech Enthusiast with immense interest in all forms of creative problem solving. Experienced in developing responsive front-end applications with React, TypeScript, and Tailwind CSS, with backend development using Node.js. Skilled in working with Git, Docker, and Vite.



Ahmad Tariq

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PROFESSIONAL PROFILE

Software Engineer with experience building scalable mobile and backend systems using modern architectures. Strong foundation in API design, system integration, and clean code practices, with hands-on exposure to AI-powered backend services and cloud-native development.

EDUCATION

BSCS

National University of Science and Technology (NUST), Islamabad, 3.27 (2026)

INTERNSHIP EXPERIENCE

Code Next Solutions

01-Jul-2024 - 31-Jan-2026

- Led refactoring of MoltoVino using Clean Architecture, improving scalability and maintainability. - Built Android TV digital signage system handling 200+ concurrent media assets with high reliability. - Reduced feature delivery time by 30% through modular architecture and reusable components.

Freelance Software Engineer

01-Aug-2023 - 30-Jun-2024

- Delivered 10+ production-grade applications across mobile and backend domains. - Designed REST APIs and backend services using Python, PHP, Firebase, and SQL/NoSQL databases. - Published apps with 5,000+ downloads across Play Store and App Store.

FINAL YEAR PROJECT

Alcruit : AI Powered Interview Platform

- Designed an AI-driven recruitment platform automating resume screening and interviews to reduce bias and manual effort. - Built microservices-based backend with FastAPI, enabling scalable AI-led resume parsing and candidate scoring. - Implemented LLM-powered resume extraction and eligibility scoring using structured JSON outputs.

TECHNICAL EXPERTISE

Cross Platform Application Development

Experienced in developing and deploying cross-platform applications with a focus on performance, reliability, and user experience. Proficient in state management, third-party integrations, and building scalable mobile solutions used in production.

Software Engineering & System Design

Strong foundation in designing scalable, maintainable software systems using clean architectural principles. Experienced in breaking down complex problems, designing modular services, and building production-ready applications across mobile and backend environments.

Backend Development & API Engineering

Hands-on experience building high-performance backend services using Python (FastAPI), RESTful APIs, and relational/non-relational databases. Skilled in designing APIs, handling data pipelines, and integrating AI-driven services with real-world applications.



Muhammad Muzammil

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PROFESSIONAL PROFILE

Computer Science student at NUST Islamabad with a strong foundation in Python, JavaScript, and C, and hands-on knowledge of Machine Learning. A fast learner with a growth mindset, eager to explore new technologies and apply problem-solving skills to real-world challenges. Passionate about building efficient, scalable solutions and continuously improving technical and analytical abilities through learning and practice.

EDUCATION

CS

SEecs , Islamabad , 2.47 (2026)

INTERNSHIP EXPERIENCE

NUST cyber security zone lab

01-Jun-2025 - 16-Aug-2025

Work in model train on data for project AI based Web application firewall

FINAL YEAR PROJECT

Artificial intelligence based Web application firewall

Designed an AI-based Web Application Firewall using machine learning to detect and mitigate web attacks in real time by analyzing HTTP traffic and identifying malicious patterns.

TECHNICAL EXPERTISE

Python, JavaScript, C | Machine Learning | Web Security

Hands-on experience with Python, JavaScript, and C, with applied knowledge of machine learning and web security for building secure and intelligent applications.



Raahima Aamir

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PROFESSIONAL PROFILE

Computer Science undergraduate with a strong focus on data science, machine learning, and applied analytics. Experienced in working with real world datasets, including data collection, cleaning, harmonization, and exploratory analysis. Skilled in building reproducible workflows and translating complex data into meaningful insights through visualization and analysis. Motivated by interdisciplinary and sustainability focused research, with a strong interest in applying data driven methods to environmental and societal challenges.

EDUCATION

Bachelor of Science in Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.66 (4)

INTERNSHIP EXPERIENCE

Software Productivity Strategists Inc.

15-Jul-2024 - 23-Aug-2024

Completed industry-recognized certifications from IBM and AWS in cloud computing and AI. Contributed to AI-based tasks including data preprocessing, model evaluation, and prototype deployment.

GIS plus

14-Jul-2025 - 22-Aug-2025

Gained hands-on experience with the MERN stack (MongoDB, Express.js, React, Node.js) for full-stack web development. Learned to integrate AWS cloud services for deployment and scalability.

FINAL YEAR PROJECT

Ustaad: AI powered path to freelance

My Final Year Project, Ustaad, is an AI-driven personalized learning platform designed to guide learners through structured, goal-oriented skill development. The system begins with a comprehensive onboarding and profiling module that collects user goals, background, and preferences through forms, a chatbot, and a resume builder, creating a detailed learner profile. Based on this profile, an AI-powered learning path generation engine dynamically generates customized learning roadmaps, breaking long-term goals into achievable milestones and tasks. Ustaad also integrates an intelligent chatbot that provides real-time assistance, explanations, motivation, and feedback throughout the learning journey, while a mock client interaction module simulates real-world scenarios to help learners practice professional communication and problem-solving skills. The platform is implemented using a modern web architecture, with a static frontend hosted on AWS S3 and CloudFront, serverless backend APIs deployed on AWS Lambda, and analytics dashboards to track progress and engagement. Overall, Ustaad aims to reduce learning friction, bridge the gap between theory and practice, and deliver an adaptive, scalable, and user-centric learning experience using AI.

TECHNICAL EXPERTISE

Data Science and Analytics

Experience working with real world datasets, including data collection, cleaning, normalization, and exploratory analysis. Comfortable identifying patterns, trends, and gaps in data and translating analytical results into meaningful insights using visualizations and reports.

Machine Learning and Deep Learning

Hands on experience building and evaluating machine learning models, including convolutional neural networks and reinforcement learning agents. Worked on supervised learning, deep learning for image analysis, and policy based and value based reinforcement learning methods.

Dataset Creation and Management

Designed and curated custom datasets for machine learning tasks. Created a steganography detection dataset by combining and processing images from the open source Caltech 256 dataset and its variations, including labeling, augmentation, and quality control.

Reinforcement Learning

Implemented and compared Advantage Actor Critic, Proximal Policy Optimization, and Double Deep Q Networks in the Atari Breakout environment. Analyzed training stability, reward progression, and convergence behavior to evaluate model performance.

Programming and Software Development

Proficient in Python, C, Java, and JavaScript for building data driven and application focused solutions. Experienced in writing clean, modular code and developing end to end systems from data processing to deployment.

Databases and Data Handling

Experience working with relational and NoSQL databases including MySQL and MongoDB. Skilled in managing structured and semi structured data for analysis and application development.

Applied Theory and Secure Systems

Applied concepts from automata theory and formal languages to practical system design. Developed a grammar based encryption system where context free grammar rules were used to generate structured cryptographic keys.



Syed Abdullah Kashif Mashhadi

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PROFESSIONAL PROFILE

Aspiring AI Engineer and Backend Developer with hands-on experience in Large Language Models (LLMs), NLP pipelines, and backend systems using Python (FastAPI). Skilled in deploying AI agents, building scalable APIs, and fine-tuning transformer-based models. Passionate about leveraging LLMs for real-world applications and streamlining backend infrastructure for modern AI systems

EDUCATION

BS Computer Science

SEECs, Islamabad, 3.35 (2026)

INTERNSHIP EXPERIENCE

HPC Lab

24-Jun-2024 - 24-Aug-2024

Research and Development Intern

CPlus Soft

01-Jul-2025 - 15-Aug-2025

Part of the CallFlow Project Data Annotation Team Worked on training of CNN+LSTM Model for audio classification problem
Achieved 94% accuracy in detecting Human voice

NUST SEECs

01-Jan-2026 - 30-Jun-2026

Research Assistant for NUST's flagship project "NUST AI Chatbot" which aims to deploy a chatbot on NUST's official website to answer admission queries.

FINAL YEAR PROJECT

HireAble

AI Interviewing and Hiring platform. For businesses to hire quicker using AI interview pipelines. For potential candidates to prepare professional interviews using real-time AI agent.

TECHNICAL EXPERTISE

Python

Primary language for backend development, ML pipelines, and LLM-based applications.

Retrieval-Augmented Generation (RAG)

Designed RAG pipelines using vector databases for document-grounded AI responses.

LangGraph / Agentic AI

Built multi-step, stateful AI agents using LangGraph for complex task orchestration.

Git & Version Control

Managed collaborative development using Git and GitHub workflows.



Zain Ali

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PROFESSIONAL PROFILE

AI engineer focused on building intelligent systems with multi-agent architectures, reinforcement learning, and large language models. I develop autonomous agents that learn and adapt in real-time, and deploy production ML systems at scale. My work spans from research in self-evolving agents to practical applications in healthcare, computer vision, and remote sensing.

EDUCATION

Computer Science

School of Electrical Engineering and Computer Science, Islamabad, 3.24 (2022)

INTERNSHIP EXPERIENCE

Victreat Health Tech

02-Jun-2025 - 24-Jan-2026

Architected self-evolving web crawler using reinforcement learning engine with dynamic policy optimization, achieving 84% faster information extraction across 10K+ websites through continuous pattern learning and adaptation. Built LLM-as-judge reward system with GPT-4 to train RL planner, improving extraction success rate from 67% to 91.3% through autonomous refinement and self-correction mechanisms. Implemented Elasticsearch-powered pattern recognition system with 2.3M+ stored DOM structures, enabling zero-shot transfer to previously unseen websites with 81% accuracy. Engineered production healthcare system with 12+ specialized LLM agents processing 4.2M+ patient interactions using distributed RAG architecture across 2M+ medical documents, with real-time query orchestration.

Machine Learning Research Engineer | Machvis Laboratory, NUST

01-Jan-2025 - 24-Jan-2026

Developed large-scale facial clustering system processing 2.6M images across 29K identities from TV broadcasts, creating comprehensive dataset capturing real-world variations in pose, lighting, expression, and aging for facial recognition research. Engineered phenology estimation pipeline from satellite imagery using deep learning models to predict crop growth stages and vegetation patterns, achieving 92% accuracy across diverse agricultural regions. Deployed computer vision models on resource-constrained edge devices achieving real-time inference with sub-100ms latency through advanced model optimization techniques including quantization and pruning. Optimized model inference pipelines using NVIDIA-enabled dockerization and dimensionality reduction techniques, reducing processing times by 65% while maintaining accuracy. Established robust CI/CD pipelines with Docker orchestration for distributed compute, enabling parallel model training 3-4x faster and streamlined deployment workflows.

FINAL YEAR PROJECT

DIA: Decentralized Internet of Self-Evolving Agents

Architecting decentralized agentic marketplace enabling autonomous multi-agent system assembly for complex tasks. Developing local peer-to-peer discovery protocol eliminating centralized registries through specialized/diverse joining strategies maintaining load balance. Integrating capability-based task matching and micropayment incentive structures for reputation-driven agent economies. Building platform addressing limitations in Google's A2A, ANP, and MCP protocols, replacing brittle centralized discovery with resilient hierarchical routing, embedding stake-based rewards and slashing mechanisms, and implementing secure peer channels for efficient collaboration at Internet scale.

TECHNICAL EXPERTISE

LLM/SLM Engineering

LLM Orchestration, Prompt Engineering, Chain-of-Thought, ReAct, Tool-Using Agents, Vision-Language Models, Edge Deployment, Quantization (GGUF, GPTQ), vLLM, LangChain, LangGraph, Function Calling

ML Frameworks, MLOps & Infrastructure

PyTorch, TensorFlow, JAX, Hugging Face Transformers, Stable-Baselines3, XGBoost, Ray RLLib, Docker/Kubernetes, MLflow, DVC, GitHub Actions, TorchServe, Model Monitoring (Prometheus, Grafana), Distributed Training (PyTorch DDP, DeepSpeed), Load Balancing, Auto-scaling

RAG & Knowledge Systems + Computer Vision

Vector Databases (Pinecone, Weaviate, ChromaDB, FAISS, Elasticsearch), Knowledge Graphs (Neo4j), Hybrid Search, Semantic Chunking, Reranking, Multi-hop Reasoning, OpenCV, YOLO, Detectron2, Image/Video Classification, Object Detection, Action Recognition, Satellite Imagery Analysis

Multi-Agent & Agentic AI + Distributed Systems

Agent Communication Protocols (FIPA), Distributed Consensus (Raft, Paxos), MARL (QMIX, MADDPG), Swarm Intelligence, BDI Architectures, Hierarchical Coordination, Emergent Behavior, DQN, PPO, A3C, Actor-Critic Methods, Offline RL, Model-Based RL, Reward Shaping, Curriculum Learning, Multi-Agent Credit Assignme ...

Programming Languages

Python, JavaScript/TypeScript, C++, SQL



Muhammad Moosa

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PROFESSIONAL PROFILE

Computer Science undergraduate with hands-on experience in Machine Learning and Large Language Models, including deep learning, RAG-based systems, and model fine-tuning. Completed an AI-driven final year project for real-time quality classification and market intelligence, and gained industry exposure as an ML intern. Strong foundation in TensorFlow, PyTorch, and modern web technologies, with a focus on building scalable, production-ready AI solutions.

EDUCATION

BSCS

SEECs, Sargodha, 3.14 (2026)

INTERNSHIP EXPERIENCE

Devsinc

01-Jul-2025 - 22-Aug-2025

Machine Learning Intern

FINAL YEAR PROJECT

Export Edge AI

The project, Export Edge AI, is designed as an integrated agri-tech solution aimed at transforming the mango exporting business by reducing post-harvest loss and enhancing market competitiveness. This system leverages deep learning (CNNs) and Large Language Models (LLMs) with Retrieval-Augmented Generation (RAG) to perform real-time quality control and market intelligence. By accurately classifying mangoes and providing instant export insights, Export Edge AI automatically generates comprehensive reports, optimizing pricing and destination recommendations for producers and exporters.

TECHNICAL EXPERTISE

Large Language Models

Tensorflow Pytorch Huggingface Transformers RAG Transfer Learning

Web Development

React js Next js Node js Express js Postgre SQL mySql Mongo DB Tailwind CSS



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PROFESSIONAL PROFILE

I am a mid-level Full-Stack and Mobile Application Developer with around 2.5 years of experience building, scaling, and owning end-to-end products in fast-paced startup and contract environments. I have worked across freelance, contract, internship, and full-time roles in both onsite and remote settings, taking projects from early concept through to production deployment. During my time at Elements Learning, I served as the lead developer on the company's main website, where I was responsible for architecture decisions, implementation, and ongoing improvements as the platform evolved.

My technical strengths span modern frontend and backend stacks, including Next.js, TypeScript, Tailwind CSS, AdonisJS, PostgreSQL, and Supabase, complemented by strong infrastructure and delivery experience with AWS, Docker, CI/CD pipelines, and RESTful APIs. I am comfortable working close to the product, making pragmatic engineering decisions, and leveraging advanced tooling to move quickly without sacrificing code quality or scalability. With a strong startup mindset, I thrive in environments that value ownership, rapid learning, and problem-solving, and I enjoy building impactful products across SaaS, e-commerce, fintech, and platform-driven ecosystems.

EDUCATION

BSCS

SEecs , Islamabad , 3.36 (2026)

INTERNSHIP EXPERIENCE

Elements Learning

10-Jun-2024 - 31-Oct-2024

Lead Web Developer for the company, working on the main website and interactive online tools for the learning of primary students. Changing the way Maths and Science is taught to students in the developing stages. <https://elements-learning.com>

FINAL YEAR PROJECT

DIA (Decentralized Internet of Agents)

We're working on a platform/protocol for heterogeneous agents to be able to collaborate together using a proper unified protocol. A Decentralized Network of agents which will be used to efficiently query, store and retrieve agents that best fit the requirements of a given task. Overall, our goal is to provide the user with a platform where they can provide any prompt (currently focused on startups) and we will give a phase-by-phase execution plan, retrieve agents for the subtasks in the plan from the network and then have them collaborate autonomously in a heterogeneous execution environment using our defined communication protocol and shared memory state

TECHNICAL EXPERTISE

Full Stack Developer

I am a full-stack developer who builds and maintains end-to-end web applications, working across both frontend and backend. I use Next.js with TypeScript and Tailwind CSS to create fast, responsive, and scalable user interfaces, and AdonisJS to develop secure server-side logic, APIs, and authentication. On th ...



Waqar Ahmed

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PROFESSIONAL PROFILE

I am a Computer Science undergrad with a deep interest in Deep Learning particularly in Computer Vision. Currently working on drone imagery, NDVI generation and Deep Learning for phenotyping for my Final Year Project. I have hands-on experience with drone image stitching, geospatial processing in QGIS and model experimentation in Pytorch. Familiar with MERN at a foundational level with high motivation in strengthening my skills in this area.

EDUCATION

Bachelor of Science in Computer Science

, Islamabad, 3.13 (2026)

INTERNSHIP EXPERIENCE

Cyber lab, National Aerospace Science & Technology Park (NASTP)

01-Jul-2025 - 24-Aug-2025

Integration and implementation of Face detection and recognition using Deep Learning algorithms.

FINAL YEAR PROJECT

Drone Assisted Crop Disease Detection, Phenotyping and Smart Spraying

This project focuses on crop disease detection, phenotyping, and smart spraying using RGB and NIR imagery for precision agriculture. Due to operational constraints, initial field images were captured using mobile phones and cameras, while multi-temporal RGB and NIR drone imagery was later provided by the course instructor. The dataset spans over one month, consisting of imagery from 13 different dates, enabling temporal analysis of crop health. As a Computer Science student, the work primarily involves data processing, image stitching and alignment, NDVI generation, and exploration of deep learning methods for disease detection and phenotyping. The smart spraying hardware and execution are handled by Electrical Engineering counterparts, ensuring clear separation between software intelligence and physical implementation. The project addresses real-world challenges such as background noise, temporal variation, and data consistency.

TECHNICAL EXPERTISE



Hakim Mahfooz Raja

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PROFESSIONAL PROFILE

Final-year Computer Science student at SEECS, NUST with hands-on experience in full-stack and backend development through multiple internships. Strong interest in scalable software systems, service-oriented architectures, and AI-powered applications. Experienced in building web applications, APIs and data-driven systems using modern technologies.

EDUCATION

Bachelor of Science in Computer Science(22-26)

SEECS , Islamabad , 3.09 (2026)

INTERNSHIP EXPERIENCE

Red Buffer

23-Jun-2025 - 01-Aug-2025

Developed a full-stack Appointment Management System using PostgreSQL, Express.js, React and Node.js (PERN stack). Implemented secure REST APIs and handled scheduling, booking, and data management features.

Roburna Labs

13-Oct-2025 - 13-Jan-2026

Worked on frontend development using React and Next.js and contributed to backend services using FastAPI with MongoDB and PostgreSQL. Assisted in API development, database integration and end-to-end application workflows.

FINAL YEAR PROJECT

Penny (AI-Powered Personal Finance Assistant)

Penny is an intelligent personal finance assistant that helps users understand and manage their finances. It collects financial data from receipts, invoices, bank statements, emails, and automated integrations, cleans and structures the data, and provides insights into income, expenses, subscriptions, and spending trends. The system supports natural language interaction, allowing users to chat with Penny to query transactions, view summaries, and receive forecasts. The project uses multi-agent orchestration for expense tracking, income analysis and financial forecasting.

TECHNICAL EXPERTISE

Programming Languages

C, C++, Python, Java, JavaScript, PHP

Web & Frameworks

React, Next.js, Node.js, Express.js, MERN/PERN Stack

Databases

PostgreSQL, MongoDB, MySQL

Backend & APIs

RESTful APIs, FastAPI

AI & Data

Machine Learning, Deep Learning, NLP

Core CS

OOP, Data Structures & Algorithms, Computer Networks



Ashbal Atif

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PROFESSIONAL PROFILE

Final-year Computer Science student at NUST with hands-on experience in embedded systems, software development, and robotics. Proficient in Python and C/C++, with practical experience using Arduino and Raspberry Pi systems, and a strong interest in Robotics.

EDUCATION

Bachelor of Science in Computer Science

NUST - School of Electrical Engineering and Computer Science, Islamabad, 2.3 (2026)

INTERNSHIP EXPERIENCE

NUST High Performance Computing Lab (HPC Lab)

01-Jul-2025 - 29-Aug-2025

Designed and implemented a Retrieval-Augmented Generation (RAG) application using Langchain and DeepSeek to allow accurate and effective querying of the NUST UG handbook.

FINAL YEAR PROJECT

Signify

A real-time, two-way ASL to English translation system that interprets American Sign Language from video input, and also generates ASL animations from English text or speech. Signify uses computer vision, deep learning, and a desktop application interface to support real-time interaction between signing and non-signing users on standard hardware.

TECHNICAL EXPERTISE

Programming Languages

Python, C/C++, Java

Databases

MongoDB, MySQL

Tools & Platforms

PyTorch, TensorFlow, Arduino, Raspberry Pi

Systems & Core CS Courses

Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, Computer Networks, Database Systems

Artificial Intelligence & Machine Learning Courses

Machine Learning, Deep Learning, Reinforcement Learning

Languages

IELTS 8.0 Band Score in English (Fluent), Urdu (Native)



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PROFESSIONAL PROFILE

Computer Science student at NUST Islamabad specializing in full-stack development with Next.js and MERN stack. Experienced in blockchain applications, machine learning, and pursuing cybersecurity knowledge. Combines technical expertise with strong problem-solving to deliver efficient, user-centered solutions across multiple domains.

EDUCATION

Computer Science

SEecs , Islamabad , 2.72 (2026)

INTERNSHIP EXPERIENCE

Brainotech IT Solutions GmbH

03-Jun-2024 - 30-Aug-2024

Specialized in developing fast, SEO friendly, and scalable web applications from pixel perfect UIs to efficient backend architectures. Experienced in remote collaboration and delivering production ready solutions.

FINAL YEAR PROJECT

Web Application Firewall: A Hybrid Approach Using Signatures and Machine Learning

This project aims to design and develop a hybrid Web Application Firewall (WAF) that combines the reliability of signature-based detection with the adaptability of machine learning-based anomaly detection. The objective is to protect university-hosted web applications against a wide range of threats, including both known attack patterns, like the OWASP Top 10 vulnerabilities, and evolving zero-day exploits. It will be implemented by initially designing a signature-based WAF using established rulesets like the OWASP CRS to create a baseline firewall. In parallel, the project will explore the use of ML techniques focusing on experimentation with various ML models, feature engineering strategies and datasets, for anomaly detection in web traffic that may signal novel attacks to design and determine a practical and effective implementation of the hybrid-WAF within a university's digital ecosystem, improving security coverage and minimizing false positive

TECHNICAL EXPERTISE

Web Developer

• Frontend: React.js, Next.js, TypeScript, Tailwind CSS, Framer Motion • Backend: Node.js, Express.js, REST APIs, Firebase, MongoDB, PostgreSQL • State Management: Redux, Zustand, React Query, Context API • Deployment & DevOps: Vercel, Netlify, GitHub Actions, Docker • Performance & SEO: Core Web Vitals o ...



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PROFESSIONAL PROFILE

Computer Science undergraduate at the National University of Sciences and Technology (NUST) with a strong interest in Artificial Intelligence, Machine Learning, and Deep Learning. Seeking opportunities to apply theoretical knowledge, develop practical skills, and contribute to data-driven and intelligent systems while growing as an AI professional.

EDUCATION

Bachelors in computer science

SEECs, Islamabad, 2.8 (2026)

INTERNSHIP EXPERIENCE

Duseca, Islamabad

02-Jun-2023 - 02-Aug-2023

Built responsive mobile apps in flutter; integrated APIs with backend.

VisionPlus, Lahore

03-Jun-2024 - 06-Sep-2024

.NET Core Developer, Worked on enterprise apps;

ForwardSports, Sialkot

02-Jun-2025 - 01-Aug-2025

Computer Vision and neural networks intern, Contributed in dataset creation for upcoming project.

FINAL YEAR PROJECT

Explainable AI for EEG Signal Classification (NeuroXplain)

Electroencephalography (EEG) is a widely adopted neurological technique for recording the brain's electrical activity. Recent advances in deep learning have demonstrated high accuracy in classifying EEG signals for detecting neurological conditions such as epilepsy, Alzheimer's disease, and seizures. Despite their strong performance, these models are often considered "black boxes," which limits their trustworthiness and adoption in clinical practice. NeuroXplain addresses this challenge by proposing an explainable artificial intelligence framework that combines accurate EEG classification with transparent and interpretable decision-making. By integrating state-of-the-art explainable AI (XAI) methods, the system provides insights into the reasoning behind its predictions, enabling neurologists to understand and trust model outcomes—an essential requirement for clinical reliability and acceptance. The framework identifies and visualizes the most influential EEG channels, temporal segments, and frequency bands that contribute to each decision, offering meaningful explanations aligned with neurological expertise.

TECHNICAL EXPERTISE

AI engineer

Strong technical background in Artificial Intelligence, Machine Learning, and Natural Language Processing, with hands-on experience in deep learning architectures, transformer-based models, and vector-based information retrieval systems. Proficient in designing, training, and fine-tuning neural networks using ...



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PROFESSIONAL PROFILE

I am a Computer Science final year student with practical experience in Angular-based frontend development and UI/UX design. I have worked on real-world projects, converting Figma designs into responsive web interfaces, and have gained professional exposure through internships, including work in a regulated environment at PTA. I am motivated to grow as a frontend developer and contribute to impactful products.

EDUCATION

BsCs

SEecs, Islamabad, 2.4 (2026)

INTERNSHIP EXPERIENCE

AIMS

12-Jan-2025 - 12-Mar-2026

Developed and maintained responsive web interfaces using Angular and TypeScript, following component-based architecture and best practices. Implemented reusable components, services, and modules to improve code maintainability and scalability. Integrated RESTful APIs and handled dynamic data rendering using Angular features such as routing, forms, and dependency injection. Converted UI/UX designs from Figma into pixel-perfect, functional frontend implementations. Applied Bootstrap / Tailwind CSS to create responsive layouts and ensure cross-device compatibility. Optimized frontend performance by improving component lifecycle handling and minimizing unnecessary re-renders. Used Git and GitHub for version control, collaborative development, and code reviews. Debugged and resolved UI issues to enhance usability and user experience across browsers.

PTA (Pakistan Telecommunication Authority)

21-May-2025 - 12-Aug-2025

Gained hands-on exposure to telecommunication regulatory frameworks, compliance procedures, and operational workflows within a government organization. Assisted in understanding telecom infrastructure, network operations, and service monitoring under national regulatory standards. Learned about data security, information protection, and policy enforcement in regulated telecom environments. Observed network performance monitoring, packet analysis, and reporting mechanisms used for regulatory oversight. Collaborated with professionals across departments, strengthening technical documentation, communication, and organizational skills. Developed an understanding of industry best practices, regulatory compliance, and governance in large-scale telecom systems.

FINAL YEAR PROJECT

InnBotics

Innbotics is a unified smart hospitality platform that enables guests to manage their entire hotel experience through a single client-side application. Users can make hotel reservations, do check-in, control room access, manage in-room IoT devices, and complete checkout seamlessly within one integrated system. On the management side, the platform provides hotel administrators and managers with a centralized dashboard to monitor overall hotel performance, track operations, and manage staff efficiently. The system includes an intelligent task assignment mechanism that automatically assigns tasks to available staff members based on real-time availability, ensuring faster service delivery and optimized workforce utilization.

TECHNICAL EXPERTISE

Frontend Development

Have an experience in building scalable and responsive web applications using Angular and TypeScript. Proficient in component-based architecture, state management, routing, and integrating RESTful APIs while ensuring performance optimization and clean code practices.

UI/UX Design & Prototyping

Skilled in designing user-centric interfaces using Figma. Experienced in wireframing, prototyping, and translating design concepts into functional and visually appealing frontend implementations with a focus on usability and consistency.

Version Control & Collaboration

Proficient in using Git and GitHub for version control, code collaboration, and managing development workflows in team-based environments.

Information Security Fundamentals

During my internship at PTA, I have foundational knowledge of information security concepts including cryptography, secure data handling, packet analysis, and authentication mechanisms, gained through academic projects and practical implementations.

Tools & Platforms

Git, GitHub, Linux, Wireshark, Nmap, Pandas

Soft Skills

Team Collaboration, Effective Communication, Problem Solving, Adaptability, Time Management



Abdul Moiz

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PROFESSIONAL PROFILE

Final-year Computer Science student with strong practical experience in full-stack web development using the MERN stack and also NextJs with Typescript. Proficient in building scalable, secure, and responsive web applications with a solid understanding of backend APIs, database design, and modern frontend frameworks. Actively seeking an entry-level software engineering role where strong problem-solving skills and hands-on project experience can add immediate value.

EDUCATION

BSCS

SEECs , Islamabad , 3.1 (2026)

INTERNSHIP EXPERIENCE

JAKSA X AUBIC

15-Jul-2025 - 16-Sep-2025

Assisted in the development of full-stack web applications using React, Node.js, Express, and MongoDB. Designed and consumed RESTful APIs, ensuring proper authentication and data validation.

FINAL YEAR PROJECT

ElevateAI

ElevateAI is an AI-driven SaaS platform designed to automate lead discovery, ideal customer profiling (ICP), and outbound email campaigns. The system leverages large language models for ICP generation, embedding-based vector search for lead matching, and machine learning techniques for ranking and clustering leads. By integrating asynchronous campaign orchestration, email personalization, and analytics, ElevateAI provides a scalable and modular solution for data-driven sales outreach.

TECHNICAL EXPERTISE

Full Stack Web Development

Proficient in frontend development using React.js, Next.js, HTML5, CSS3, JavaScript, TypeScript, and Tailwind CSS, with strong backend experience in Node.js, Express.js, and RESTful API development. Skilled in working with databases including MongoDB and MySQL, and experienced in using tools and platforms suc ...



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PROFESSIONAL PROFILE

Computer Science undergraduate with Machine Learning experience at Fortis Capital, ONT Lab, Chalmers University and CETQAP, along with a project portfolio featuring multimodal stock price forecasting, land classification based GDP prediction, NLP powered financial sentiment analysis, full stack application development and more.

EDUCATION

BS Computer Science

SEecs, Islamabad, 3.45 (2026)

INTERNSHIP EXPERIENCE

ONT Lab SEecs

01-Jun-2025 - 12-Sep-2025

Developing Deep Learning models for automated anomaly detection, identification, and localization in Optical Fiber networks, later used in a research paper. Implemented unsupervised pretraining (autoencoder) to handle label scarcity, added class-imbalance handling (focal loss, weighted sampling). Configured data pipelines with synthetic data augmentation

CETQAP

01-Jun-2024 - 15-Aug-2024

Implemented, verified, and contributed to multiple research paper results and conclusions; developed a quantum kernel interface for SVM classification.

Chalmers University, Optical Networks Department

15-Sep-2025 - 15-Jan-2026

Co-authored two submitted papers on the application of machine learning in Optical Fiber Networks, publish decision pending. Developed ML models for extensive novel Optical Fiber datasets, achieving accuracy over 95% for multiple projects.

FINAL YEAR PROJECT

Fortis Aegis

Fortis Aegis is an AI-powered portfolio advisory platform that uses advanced Machine Learning algorithms to provide multimodal data based advice for investment decisions in stocks, options, and cryptocurrency, along with quantitative analysis of user portfolios.

TECHNICAL EXPERTISE

Machine Learning & AI

Extensive Machine Learning experience developing vision and temporal models with PyTorch and Tensorflow. Completed Deep Learning Specialization certificate.

Full Stack Development

Experienced in Full Stack Development, including projects in Python, Rust, and Node.JS.

Data Engineering

Strong foundation in creating and managing complex data pipelines such as finance, geospatial, and telemetry data.



Qurratulain Zafar

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PROFESSIONAL PROFILE

I am a final year Computer Science student with a strong focus on Machine Learning and Deep Learning. I have solidified my theoretical foundation by completing every AI elective offered during my undergraduate degree at NUST alongside a specialized Machine Learning and Deep Learning certification from Coursera. I have recently developed specialized expertise in Generative AI and building applications based on Large Language Models. My pre-medical background gives me a unique advantage in understanding the medical domain which allows me to deliver deep insights in Healthcare AI projects. This is demonstrated by my final year project ConfidMind where I engineered a privacy-preserving mental health AI agent using Federated Learning and RAG. Through these academic and personal projects I have honed my ability to work effectively in collaborative teams to deliver complex software solutions. I am proficient in the full development lifecycle which includes training complex models and deploying them as complete full-stack applications with robust backends. I am now seeking opportunities in the industry to work as an AI Engineer or Full Stack Developer where I can leverage my technical skills and collaborative experience to build scalable intelligent systems.

EDUCATION

BS Computer Science

School of Electrical Engineering and Computer Science (SEecs), Islamabad, 2.93/4.0 (2022)

INTERNSHIP EXPERIENCE

AI intern at ONT Lab (Optical Networks and Technologies Lab), NUST (Hybrid)

16-Jun-2025 - 18-Aug-2025

- Developed a context-aware AI chatbot for a network management application, enabling users to query system states and troubleshooting logs using natural language.
- Architected a high-performance Redis database to serve as the primary knowledge store, optimizing data retrieval speeds to ensure low-latency responses for the chatbot.
- Implemented a Retrieval-Augmented Generation (RAG) pipeline that dynamically fetched relevant technical documentation and network configurations from Redis to ground the LLM's answers.

AI Intern at Apify (SMC Pvt) Ltd.

23-Jun-2025 - 25-Aug-2025

- Processed and cleaned historical financial market data using Python and Pandas to create high-quality datasets for model training.
- Experimented with various machine learning algorithms using PyTorch and Scikit-learn to analyze trends in digital asset prices.
- Assisted the engineering team in validating model performance by calculating various performance metrics.
- Wrote and optimized Python scripts to automate data collection and feature engineering tasks for time-series analysis.
- Contributed to the testing of inference endpoints to help ensure models functioned correctly before integration into the larger system.

FINAL YEAR PROJECT

ConfidMind: Federated Learning-Based Mental Health AI Agent

- Developing a privacy-preserving machine learning architecture utilizing simulated federated learning to train emotion classifiers on decentralized data, ensuring sensitive user text remains on local clients.
- Fine-tuning transformer-based models on the GoEmotions and DAIC-WOZ datasets to perform multi-task learning for real-time emotion detection and clinical depression screening.
- Implementing a retrieval-augmented generation pipeline that uses vector databases to retrieve clinical knowledge, grounding generative AI responses to minimize hallucinations and ensure safety.
- Engineering data pipelines to standardize heterogeneous input text and clinical labels into a unified format for joint multi-task training and evaluation.
- Building a scalable inference API using FastAPI to serve real-time model predictions and integrating it with a React frontend to visualize emotional trends and progress reports.
- Evaluating model performance using F1-scores for emotion classification and regression metrics for PHQ-8 score prediction.

to ensure clinical relevance and reliability.

TECHNICAL EXPERTISE

Languages

Python, C++, Java

ML & DL libraries/frameworks

PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, Pandas, NumPy, Matplotlib

Generative AI & NLP

Large Language Models (LLMs), RAG Pipelines, LangChain, Hugging Face Transformers, NLTK, Vector Databases (Redis)

Web Development

React.js, FastAPI, HTML/CSS, RESTful APIs

Databases

MongoDB, Redis, SQL

Tools and Techniques

Federated Learning, Computer Vision, Git/GitHub, Agile Methodology, Data Visualization



Abdullah Imran

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PROFESSIONAL PROFILE

My aim is to build a strong career in data science and machine learning by working on real-world problems, improving my technical skills, and contributing to data-driven decision making in an organization.

EDUCATION

CS

SEecs, Islamabad, 3.37 (2022)

INTERNSHIP EXPERIENCE

Zoomiez

17-May-2025 - 08-Sep-2025

I worked on extracting MCQs and short questions from PDF documents by converting them to Markdown using Mistral OCR. Applied pattern matching to structure the content into JSON format, followed by LLM-based correction, answer validation, and topic-wise analysis. The pipeline focused on improving accuracy, structure, and usability of question data.

FINAL YEAR PROJECT

Analyzing UAV based multispectral data for Genotypic-aware Crop performance Assessment

This project aims to support modern agriculture by leveraging UAV-based multispectral imagery. The system focuses on two things: improving the accuracy of crop-yield prediction, and identifying high-performing crop genotypes under field conditions. The project is currently working with wheat fields containing multiple genotypes, and the overall objective is to extract meaningful insights from UAV data that can assist both farmers (through yield estimation) and breeders (through genotype evaluation).

TECHNICAL EXPERTISE

Machine Learning & Data Analytics

Worked on end-to-end ML and data projects including data cleaning, feature analysis, model building, and visualization. Experience with Python, ML models, dashboards, APIs, and real-world datasets. Comfortable with debugging, experimentation, and improving results step by step.



Aqsa Batool

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PROFESSIONAL PROFILE

I'm a Full Stack Developer with practical experience in developing AI-powered web applications using modern frameworks such as the MERN Stack, FastAPI and Next.js. Skilled in building complete web solutions from frontend interfaces to backend services, with an emphasis on maintainable code, performance, and usability.

Has worked on production-level systems involving AI-based feedback analysis, third-party API integrations, and data-driven dashboards for business insights. Comfortable working in collaborative development environments and experienced with version control using Git and GitHub. In addition to professional work, has completed multiple personal and academic projects that reflect strong technical foundations and an interest in applying AI to real-world web applications.

EDUCATION

BS CS, 7th semester

SEECs , Islamabad , 2.83 (2026)

INTERNSHIP EXPERIENCE

devJunction

16-Jun-2025 - 31-Aug-2025

- Worked on a web-based AI-powered feedback analysis system for the hospitality sector (restaurants). - Integrated backend APIs to fetch Google Reviews and display location-wise score matrices for comparison. - Implemented AI-driven insights and suggestions based on negative customer feedback. - Enhanced the admin dashboard to present actionable insights for restaurant management. - Fixed live production bugs to ensure a smooth and reliable user experience. - Collaborated using Git and GitHub for version control and team-based development. Skills: NestJS, Next.js, PrismaORM, PostgreSQL, REST APIs, Tailwind CSS, shadcn, AI, Git, GitHub

Code Knitters AI

09-Sep-2025 - 09-Dec-2025

- Collaborated on full-stack development of dynamic web applications. - Built responsive front-end components using React.js and Next.js. - Participated in code reviews, debugging, and feature enhancements. Skills: React.js, Next.js, Express.js, MongoDB, JavaScript, REST APIs, Git

FINAL YEAR PROJECT

AceVision - AI-Powered Tennis Training & Analysis Platform

To address the lack of accessible, data-driven tennis analytics in Pakistan, we propose AceVision, a Software-as-a-Service (SaaS) platform that leverages Machine Learning (ML), Deep Learning (DL), and Computer Vision (CV) to analyze tennis gameplay. AceVision provides players and coaches with actionable insights by processing video footage to generate detailed statistics, movement heatmaps, and performance metrics. These insights allow players to make informed decisions to improve their skills, refine techniques, and optimize training strategies in real-time. The platform is designed as an intuitive mobile application, enabling users to conduct technical evaluations and access analytics without the need for expensive hardware or specialized environments. AceVision aims to bridge the gap between professional-level performance analytics and everyday training needs. By combining state-of-the-art computer vision algorithms with deep learning models, the system can deliver real-time feedback and comprehensive statistics in an easy-to-understand format. The SaaS architecture ensures scalability, allowing the platform to support multiple users simultaneously, while future updates will continuously improve model accuracy and analysis capabilities. AceVision will empower tennis players in Pakistan and beyond to train smarter, track progress objectively, and gain competitive insights that were previously accessible only through high-end, professional systems.

TECHNICAL EXPERTISE

Full Stack Web Developer | AI-Enabled Applications | MERN, Next.js, FastAPI

Full Stack Web Developer with hands-on experience building scalable, AI-enabled web applications using MERN Stack, Next.js, and backend technologies. Has worked on production-level systems involving AI-powered feedback analysis, Google Reviews integration, and data-driven dashboards for business insights. Exp ...



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PROFESSIONAL PROFILE

Software Engineer specializing in **Backend Systems** and **Applied AI**. Experienced in building scalable **REST APIs** (FastAPI) and real-time **Computer Vision** pipelines (YOLOv11). Strong foundation in **DevOps** (Docker, Linux) and **Operational Security**. Proven ability to deliver end-to-end solutions, from training custom AI models to deploying production-ready microservices.

EDUCATION

Bachelor of Science - BS, Computer Science

School of Electrical Engineering and Computer Science , Islamabad , 3.33 (3.65 in last 2 years) (2026)

INTERNSHIP EXPERIENCE

Japan Science and Technology Agency

14-Jul-2019 - 20-Jul-2019

Selected as one of the top scholars globally for the Sakura Science Program. Engaged in advanced robotics and physics research workshops at Tokyo Institute of Technology and KEK, gaining exposure to international engineering standards and research-to-production workflows.

Horizon Tech Services

10-Jun-2025 - 08-Aug-2025

Engineered robust REST APIs using FastAPI for a collision detection system, enabling reliable real-time performance under production-like load with sub-100ms latency. Optimized inference pipelines for on-device AI using MediaPipe and TFLite, enabling real-time gesture recognition on Android edge devices without cloud dependency.

FINAL YEAR PROJECT

SecureVision: Agentic AI for Dynamic Public Threat Prediction

Architecting an end-to-end surveillance pipeline integrating YOLOv11, BoTSORT, and Pose Estimation to detect threats (weapons, fights) in real-time. Engineering a custom fusion layer where visual detections trigger Small Language Model (SLM) analysis for context verification, reducing false positives by ~40%. Aiming to optimize inference to process at 25+ FPS on consumer hardware by leveraging multi-threading and Docker containerization.

TECHNICAL EXPERTISE

Backend & AI Engineering

FastAPI, Flask, PyTorch, YOLOv11, OpenCV, Hugging Face, LangChain, Microservices Architecture

DevOps & Cloud Infrastructure

Docker, Container Security, Linux System Administration, AWS SageMaker (Hands-on), CI/CD Pipelines

Programming Languages

Python (Advanced), C++, TypeScript, SQL (PostgreSQL), Bash/Shell Scripting, Java

Frontend & Tools

Next.js, React, Tailwind CSS, Git, Postman, WebAuthn, Docker Sandboxing



Aqeedat Fatima

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PROFESSIONAL PROFILE

UI/UX designer with freelance experience collaborating with three agencies to design **emails and landing pages** for diverse brands. Skilled in creating visually engaging, conversion-focused designs and turning concepts into responsive, user-friendly interfaces. Passionate about crafting intuitive digital experiences and continuously expanding technical expertise, including frontend development and AI-driven workflows.

EDUCATION

Computer Science

School of Electrical Engineering and Computer Science, Bahawalpur, 2.94 (2026)

INTERNSHIP EXPERIENCE

Oryns Solutions

01-Jun-2025 - 31-Jul-2025

Worked on AI and machine learning fundamentals, including data preprocessing, feature extraction, and model training. Assisted in building and evaluating machine learning models for real-world problem statements. Gained hands-on experience with Python-based AI tools and libraries for data analysis and model implementation. Analyzed datasets, improved model performance, and interpreted results to support decision-making. Collaborated with mentors to understand AI workflows, ethical considerations, and deployment concepts.

FINAL YEAR PROJECT

Agrivision: a crop health and farm monitoring system

Designed and implemented a scalable AI-based crop health monitoring platform leveraging deep learning for cotton leaf disease detection, custom image quality scoring (blur and brightness analysis), risk-aware decision logic, interactive data visualizations, and automated PDF reporting, with planned extensions for growth-stage tracking and satellite-driven field analytics.

TECHNICAL EXPERTISE

UI/UX Design & Frontend Development (with AI/ML Exposure)

UI/UX designer and frontend developer with hands-on experience in creating user-centered interfaces, interactive prototypes, and responsive web applications. Skilled in translating design concepts into clean, functional code using modern frontend technologies. Additionally, have foundational exposure to machi ...



Sarmad Sultan

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Address: H#45, STREET NO. 5, AHMED BLOCK, MADINA TOWN,QUEENS ROAD, SARGODHA. , Sargodha , Pakistan

PROFESSIONAL PROFILE

With a strong foundation in competitive mathematics at both national and international levels, I have developed a deep passion for mathematics and physics, with a primary focus on mathematical reasoning and problem-solving. This background shapes how I approach artificial intelligence—not just as a set of models, but as a mathematical system to be understood, optimized, and engineered for efficiency and reliability.

My work in machine learning is driven by system-level thinking, focusing on performance optimization, scalability, and principled design rather than black-box experimentation. Alongside technical depth, I bring strong communication and leadership skills, developed through extensive involvement in extracurricular activities, student societies, and large-scale events. I thrive in collaborative environments and enjoy bridging rigorous technical work with clear communication and team-driven execution.

EDUCATION

Bachelors of Science in Computer Science

School of Electrical Engineering and Computer Science , Islamabad , 3.6 (2026)

INTERNSHIP EXPERIENCE

MachineVisionandIntelligent Systems Lab

01-Apr-2025 - 31-Aug-2026

Suparco

31-May-2024 - 31-Aug-2024

Summer Research Intern

LUMS - CVGLab

01-Jun-2025 - 30-Sep-2025

Research Assisstant

FINAL YEAR PROJECT

MedLingo: Medical LLM with Mixture of Experts

MedLingo is a research-driven clinical AI system focused on building domain-specific medical language models using a Mixture of Experts (MoE) architecture. The project involves training and fine-tuning multiple specialized small language models on distinct medical subdomains and intelligently routing queries to achieve near-LLM performance with significantly improved efficiency and reduced computational cost. The system emphasizes optimization, scalability, and reliability, including expert routing strategies, efficient training pipelines, and inference optimization. Designed as a clinical decision-support tool for healthcare professionals, MedLingo prioritizes accuracy, interpretability, and safe deployment over general-purpose usage.

TECHNICAL EXPERTISE

Machine Learning Engineering, Optimization & Scalable AI Systems

Extensive research-driven experience in machine learning with a strong focus on system efficiency, optimization, and performance improvement. Skilled in designing and optimizing end-to-end ML systems, including data pipelines, model architectures, training workflows, and inference optimization. Experienced in ...



Ali Abbas

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[utm_source=share&utm_campaign=share_via&utm_content=profile&utm_medium=android_app](https://www.linkedin.com/in/ali-abbas-421399286?utm_source=share&utm_campaign=share_via&utm_content=profile&utm_medium=android_app)

Address: 5 MARLA SCHEME,CHITTERPARI, TEH. & DISTRICT AZADMIRPUR, KASHMIR , Mirpur , Pakistan

PROFESSIONAL PROFILE

I am a product designer with over 2 years of experience in building AI-based SaaS and fintech applications. My experience lies in UI/UX design while delivering wireframes, high-quality prototypes, design systems, components, MVPs.

EDUCATION

BS Computer Science

SEECs , mirpur azad kashmir , 3.5 (2026)

INTERNSHIP EXPERIENCE

Nustrive

01-Jan-2024 - 01-Dec-2024

I worked as a web designer with fast-moving edutech team to deliver proprietary educational platform for students preparing for NET. It lets students prepare for MCQs, learn for topics from crafted resources.

Code Knitters

01-Jan-2025 - 30-May-2025

Served in creating AI-based image generation app in media and entertainment domain that is currently published on Apple App Store.

Datapulse Technologies

01-Jun-2025 - 28-Jan-2026

- Created full scale fintech management and microfinance platform for Cyprus-based clients. - worked on several web design projects from freelance platforms like Upwork and Fiverr - contributed to designing a property management platform for Irish clients

FINAL YEAR PROJECT

Memora, an AI-based assistant productivity assistant for ADHD people

Helps in routine tasks for people with ADHD who struggle with productivity

TECHNICAL EXPERTISE

Product Design

Designing digital products for fast-moving companies and software groups

UI/UX Design

Designing interfaces for software application that makes the software compliant to accessibility and HCI rules



Sadia Masood Arshad

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Address: 165 D2 JOHAR TOWN LAHORE , Lahore , Pakistan

PROFESSIONAL PROFILE

Computer Science undergraduate with hands-on experience in mobile and web development, AI-based systems, and full-stack applications. Has worked with React Native, Flutter, and modern web frameworks, and built apps as a part of coursework and internships

EDUCATION

Bachelors Computer Science

SEECs , Lahore , 3.44 (2026)

INTERNSHIP EXPERIENCE

Buggcy

12-Jun-2025 - 27-Jul-2025

Mobile App Development Intern– Developed mobile application features using React Native.– Implemented UI components, navigation, and REST API integration

FINAL YEAR PROJECT

AdabDost

AdabDost is a Urdu Literature Learning Platform for explanations,making it easier for users to enjoy urdu..

curious readers or students.It has Urdu poems with verse wise

AdabDost

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curious readers or students.It has Urdu poems with verse wise

TECHNICAL EXPERTISE

Web and Mobile App Development

Making websites in html/css and react and mobile apps in Flutter and ReactNative.



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