SEECS
SCHOOL OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE, NUST

SEECS
GRADUATE BOOKLET
BESE - BACHELOR OF SOFTWARE ENGINEERING
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 Tauha Kashif

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PROFESSIONAL PROFILE

Fresh Software Engineering graduate passionate about data engineering, with hands-on experience in AWS and GCP pipelines, real-time processing, and dashboarding. Focused on developing efficient data processing systems that transform raw data into actionable insights. Experienced in batch data processing, cloud infrastructure optimization, and building analytics dashboards that drive business decisions.

EDUCATION

Bachelors in Software Engineering

School of Electrical Engineering and Computer Sciences , Islamabad (2022)

INTERNSHIP EXPERIENCE

Software Productivity Strategists (SPS) Inc.

01-Jul-2025 - 22-Sep-2025

DevOps/DataOps Intern • Shipped CI/CD for containerized data services with Jenkins (multibranch) and reproducible Docker builds; gated quality via pre-commit (Black, Ruff). • Instrumented ETL containers + hosts with Prometheus/Grafana (cAdvisor, Node Exporter, Alertmanager); built scrape configs & dashboards for latency, errors, and capacity. • Standardized project scaffolding (.env, .dockerignore, Makefile, READMEs) so new services go from repo ’ deploy with fewer steps and cleaner diffs.

Buildables

22-Jul-2025 - 18-Oct-2025

Data Engineering Intern • Built production-grade ETL pipelines with hash-based change detection (MD5) and PostgreSQL upserts, processing incremental loads while maintaining full audit trails and execution metadata for data lineage tracking. • Designed star schema data warehouse implementing SCD Type-2 for historical tracking; wrote complex analytical queries using CTEs, window functions, and joins to derive business insights from e-commerce transaction data. • Optimized large dataset processing by benchmarking Pandas vs Dask vs Polars on 2M+ records, achieving 10-15x performance gains through lazy evaluation and Parquet columnar storage—reducing file sizes by 75%. • Developed modular data quality framework with custom cleaners for standardizing inconsistent formats (dates, currencies, names), achieving 99.7% parse success across messy real-world datasets. • Containerized entire data stack using Docker Compose with isolated PostgreSQL instances, automated schema initialization, and health checks—ensuring reproducible deployments across environments.

FINAL YEAR PROJECT

AI Development Environment Troubleshooting Copilot

- Autonomous AI Agent System: Developed an intelligent troubleshooting copilot that automates diagnosis and resolution of development environment configuration issues (Docker, package managers, CLI toolchains) using LLM-powered workflow orchestration. - System Profiling & Context Extraction: Built modular CLI utilities for capturing structured error traces and comprehensive system snapshots (hardware, processes, services, network, installed packages) to provide rich diagnostic context. - Hybrid Web Architecture: Engineered full-stack solution with React/TypeScript frontend and FastAPI backend, featuring real-time WebSocket event streaming, chat-based interface, and agent workflow visualization. - RAG-Enhanced Troubleshooting Pipeline: Implemented vector-based semantic retrieval system using ChromaDB with e5-base-v2 embeddings for context-aware error diagnosis, combined with LangGraph-based multi-stage workflow orchestration (initialization → context gathering → step generation → error resolution). - Structured Data Pipeline: Designed JSONL-based training data format for error normalization and context requirement detection across multiple domains (Python, Node.js, Docker, Git), enabling future fine-tuning and knowledge base expansion. - Production-Ready Features: Integrated error recovery mechanisms, command safety verification, diff-based state

tracking with Merkle trees, and privacy-first PII redaction capabilities for enterprise deployment readiness. Tech Stack: Python, React, TypeScript, FastAPI, LangGraph, ChromaDB, WebSocket, Docker, Tree-sitter, FAISS Business Potential: Designed with startup scalability in mind — IDE integrations, DevOps CI/CD pipeline hooks, and tiered SaaS business model targeting individual developers through enterprise teams.

TECHNICAL EXPERTISE

Data Engineering

- ETL/ELT pipeline development and optimization. - Real-time data processing and streaming architectures. - Data warehouse design and dimensional modeling. - AWS data services (S3, Glue, Redshift, Lambda). - GCP data services (GCP Buckets, DataFlow, BigQuery, CloudSQL, Looker Studio). - Python and SQL fo ...

Software Engineering

- Full-stack web development (FastAPI, React, Node.js) - RESTful API design and microservices architecture - Object-oriented programming and design patterns - Version control with Git and GitHub (branching, PRs, code reviews) - Agile methodologies and project management (Jira) - Software testing and qual ...

Database Expertise

- Relational database design and normalization - SQL query optimization and performance tuning - Database administration (PostgreSQL, MySQL) - Stored procedures, triggers, and views - Transaction management and ACID principles - Database indexing strategies - NoSQL databases and data modeling - Backup, ...

DevOps Expertise

- Containerization with Docker and container orchestration - CI/CD pipeline design and implementation - Infrastructure as Code (IaC) and automation - Cloud platforms (AWS, GCP services and deployment) - Linux system administration and shell scripting - Monitoring, logging, and observability tools - Git ...

Zainab Athar

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PROFESSIONAL PROFILE

Please update objective section.

EDUCATION

Bachelors of Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.5 (2022)

INTERNSHIP EXPERIENCE

Skylabs AI

01-Jul-2025 - 31-Aug-2025

Developed an automated evaluation pipeline for C++ by designing a hybrid framework combining SWE-Factory and Multi-SWE Bench. Focused on building a SWE-Bench for C++ to enable accurate and domain-appropriate golden patch generation for GitHub repositories. Tested the pipeline on multiple repositories including simdjson and fmtlib.

Zhejiang University, China

31-Jul-2025 - 31-Aug-2025

Worked on automated entity and relation extraction for constructing subject–predicate–object triples. Utilized vertical- domain Englishand Chinesedatasetsincluding CHIP-20 and ReTACRED. Designed and planned a domain-specific pipeline, experimenting with preprocessing strategies and model architectures to improve Knowledge Graph construction

Ayla

01-Oct-2024 - 30-Nov-2024

Developed an AI-assisted product to support patients with mild cognitive impairment. Designed conversational workflows using Large Language Models to aid memory recall and daily task assistance, integrating domain-specific prompts for improved usability and patient engagement.

OffensioX

01-Aug-2024 - 30-Sep-2024

Identified and mitigated web application vulnerabilities, with a focus on preventing cross-site request forgery (CSRF) attacks. Collaborated with the security team to test, analyze, and strengthen application defenses against common exploit patterns.

DataQuartz

01-May-2024 - 23-Aug-2024

Contributed to the development of QuartzGPT by integrating Large Language Models with Flowise and LangChain. As- sisted in building prompt-chaining workflows, orchestrating LLM pipelines, and enhancing system performance for inter- active AI-driven applications.

FINAL YEAR PROJECT

AI-Assisted Forensic Analysis System for Decision Support

The proposed system is designed to support legal experts by automating complex data analysis tasks, thereby reducing the risk of human error while ensuring that final decisions remain under human control and aligned with legal and ethical standards. Potential features include tampering detection in images and videos, fake news detection with citations and corrections, voice identification with confidence scores and transcriptions, and handwriting analysis to identify authorship. All outputs must be explainable, auditable,

and accompanied by relevant graphical data to meet the transparency requirements necessary for legal applications.

TECHNICAL EXPERTISE

Software Engineer

Expertise in ML/AI. Working on LLMs and exploring GenAI.

Ahmar Kamran

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PROFESSIONAL PROFILE

Machine Learning/Computer Vision Engineer with a strong passion for AI, Large
Language Models (LLMs),
Experienced in developing keypoint detection models, image segmentation, and deep
learning pipelines for real-world applications, training object detection models like fire and smoke detection, video analytics using opencv.

Comprehensive understanding of 3D generation models (e.g., NeRFs), encoder
architectures including Variational Autoencoders, Diffusion Models,
GANs and data preprocessing techniques (PCA, LDA, UMAP) for
dimensionality reduction and feature extraction. LSTMs for sequence related problems (predicting poses of humans using previous poses).
Skilled in Python, TensorFlow, PyTorch, OpenCV, and designing AI-driven solutions for
visual perception, generative modeling.
Skilled in fine-tuning LLMs with hands-on experience using LangGraph for building multi-
agent AI systems. Hands on experience with langgraph based agent workflows, tool calling and developing ReAct agents for troubleshooting PC related problems.

EDUCATION

Software Engineering

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

INTERNSHIP EXPERIENCE

Pakistan Telecommunication Company Limited (PTCL)

20-Jun-2025 - 08-Aug-2025

Redesigned PTCL's Legacy Order Management System by developing a modern React frontend and refactoring the backend into a microservices architecture in .NET. Integrated complex database structures and stored procedures into backend services, ensuring accurate feature mapping and improved system performance.

True Tech Solutions

01-Jun-2024 - 01-Sep-2024

Developed a Desktop app in Flutter to improve in-store order handling for eyewear retail stores. Implemented Clean Architecture, BLoC for state management, MVVM, and dependency injection, with Firebase for authentication and database management. Contributed to both frontend and backend of an cross platform app, ensuring scalability and maintainability

FINAL YEAR PROJECT

Troubleshooting Agent

An agent which can solve the local environment,server or desktop related errors like dependency issues which effect productivity of a developer. The Agent can help in diagnosis and solution of any problem related to the computer or server, based on the query of the user. Hardware, OS and kernel aware solutions with automated command execution with user permission for problems faced during deployments on server, development environment setup, Containerization & Orchestration, Networking & Connectivity Issues, Performance & Monitoring Issues and Hardware-Aware Diagnostics Example capabilities include diagnosing and resolving Python, Node.js, CUDA, and system dependency conflicts; kernel module and driver mismatches; Docker and Kubernetes deployment failures; GPU, disk, and memory hardware issues; server misconfigurations (Nginx, Gunicorn, systemd); networking, firewall, and

SSH problems; and performance bottlenecks. The agent operates with hardware, OS, and kernel awareness, supports automated command execution with explicit user consent, maintains detailed logs, and provides explainable, rollback-safe solutions to minimize developer downtime.

TECHNICAL EXPERTISE

AI/LLM Engineer

Experience building production-style LLM agents: LangGraph workflows, tool-augmented reasoning ,ReAct Architecture implementation for agents, local model serving (AirLLM), RAG implementation with ChromaDB, and incremental vector store updates from system snapshots optimized for low latency and logs on Linux.

Computer Vision Engineer

Hands-on experience building production-grade vision systems across face analysis, human pose modeling, video analytics, and generative 3D modeling. Strong background in designing end-to-end deep learning pipelines, from data collection and preprocessing
to model deployment and real-time inference. Experie ...

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PROFESSIONAL PROFILE

A Software Engineering undergraduate with a strong research orientation. I work at the intersection of generative AI and resource-constrained deployment. My experience spans diffusion-based generative models and ultra-lightweight deep learning architectures optimized for real-time inference on edge hardware. I am particularly interested in trustworthy and efficient AI systems.

EDUCATION

Bachelor of Engineering in Software Engineering

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

INTERNSHIP EXPERIENCE

MITACS GLOBALINK RESEARCH INTERN – Brock University, Canada

01-Jun-2026 - 31-Aug-2026

Engineered an automated Root Cause Analysis (RCA) pipeline using Code Llama and RAG frameworks to parse high-velocity unstructured logs, overcoming context window limitations for long-sequence traces. Fine-tuned domain-specific transformer models for anomaly detection and integrated them with OpenTelemetry and Logstash to enhance distributed system observability. Developed a prototype AI assistant capable of interpreting complex system failures and generating human-readable debugging explanations.

MLINTERN - EMBEDAIOTLAB,SINES,NUST

01-Jun-2025 - 01-Sep-2025

Optimized ultra-lightweight CNNs for 5G channel estimation, reducing model size to ~163 trainable parameters with INT8 quantization for sub-millisecond inference on NVIDIA Jetson. Developed lightweight CNN architectures (101–745 parameters) for pilot-based SISO OFDM channel estimation, trained on 1024 synthesized CSI grids from MATLAB 5G Toolbox Achieved NMSE as low as −11.9 dB on MATLAB 5G Toolbox data while reducing inference to < 1 ms on Jetson Nano and Xavier using model compression techniques Focused on integrating ML models for channel estimation into software systems under operational constraints. It enhanced my skills in edge computing, model deployment, and system-level evaluation, directly connecting with EDISS courses on Data Intensive Engineering, Edge Computing for ML, and Software Quality Engineering.

AI/MLContributor - NASAOpenScienceDataRepository(OSDR),UnitedStates(Remote)

01-Aug-2025 - 30-Nov-2025

Contributed to the development of machine learning pipelines for classifying radiation-induced DNA damage in microscopy images from the OSD-366 dataset. An attention-based CNN architecture was implemented, and evaluation metrics were optimized by transitioning from accuracy to F1-macro scoring, addressing severe class imbalance. A new data-loading pipeline, built with ArrayRecord and Grain, minimized bottlenecks from remote file access, improving efficiency in shared environments like Google Colab. The project emphasized the importance of system-level engineering in deploying machine learning models within operational workflows, highlighting how evaluation and data pipelines shape system performance and conclusions.

SOFTWARE DEVELOPMENT INTERN – APNA-WIFI (NSTP, NUST)

01-Jun-2024 - 31-Aug-2024

Built scalable Python web scraping pipelines (Selenium) and automated data ingestion into MySQL databases, enabling continuous course metadata collection Developed a Django-based course recommender with BERT and DistilBERT for semantic similarity matching, demonstrating the feasibility of applied NLP for ed-tech solutions

Research Intern - SMART LABS

01-Oct-2026 - 31-Dec-2026

Conducting a structured survey on Explainable Retrieval-Augmented Generation (RAG) Designed a systematic literature review workflow and taxonomy, organizing 40+ papers across retrieval-level, generation-level, evaluation benchmarks, and application/tooling dimensions Coordinating a small research team to critically analyse, synthesize, and consolidate findings toward a submission-ready manuscript

FINAL YEAR PROJECT

SmartSketch: AI-Powered Facial Image Generator from Text

Generative AI, Stable Diffusion, conversational AI, LLM integration, GANs, CLIP, ArcFace, Python • Designed and fine-tuned diffusion-based generative models for text-guided facial image synthesis • Implemented LLM-driven orchestration to manage generation, scoring, and safety checks • Developed evaluation pipelines using CLIP (semantic alignment) and ArcFace (identity preservation) • Integrated responsible AI safeguards including consent gates, content filtering, and audit logging

ML-Based Channel Estimation for Underwater OTFS Communication

Built and optimized neural networks for sparse channel estimation in underwater OTFS systems with extreme class imbalance (271:1). Identified critical bug in existing code, designed 3-model comparative study, and achieved 0.65 F1-score using Focal Loss and proper evaluation metrics. Migrated from MATLAB to PyTorch, reducing training time by 20× via GPU acceleration. Demonstrated CNN superiority over LSTM for spatial pattern recognition.

Lightweight CNN-BiGRU Models for Efficient HAR on Wearable Sensors

Reproduced and optimized deep learning architectures for human activity recognition on wearable sensors. Starting from HARDenseRNN baseline (33.7M parameters, 90.74% accuracy), designed lightweight CNN-BiGRU variant with 90,066 parameters achieving 95.21% accuracy and 87.08% Macro F1-score on WISDM dataset, a 99.7% parameter reduction with performance improvement. Implemented Teacher-Student Knowledge Distillation framework using Transformer teacher model (~85% accuracy) to train CNN-only student with 2,790 parameters. Applied post-training INT8 quantization, structured weight pruning (~50% sparsity), and 16-centroid weight clustering to achieve 27.45 KB model size. Processed dataset of 1,086,465 samples using 256-sample sliding windows with magnitude-based feature extraction for 6-class classification (Walking, Jogging, Upstairs, Downstairs, Sitting, Standing).

TECHNICAL EXPERTISE

Deep Learning & Generative AI

Model Evaluation | CNNs | RNNs(GRU/Bi-GRU) | Transformers | Diffusion Models | CLIP | ArcFace

Large Language Models

Long-sequence and noisy-text modeling (logs, domain data) | LLM Fine-Tuning (task-specific, instruction tuning) | Retrieval-Augmented Generation (RAG)

Programming & Scientific Computing

Python (computer programming) MATLAB C/C++

Model Optimization & Deployment

Jetson Nano | Jetson Xavier | ONNX | TFLite

Frameworks & Tooling

PyTorch | TensorFlow | Keras

Muhammad Bilal Khan

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PROFESSIONAL PROFILE

Motivated undergraduate with experience in research, internships, and project-based learning. Strong problem-solving skills with a keen interest in applying knowledge to real-world challenges and emerging technologies.

EDUCATION

Bachelor of Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.56 (2026)

INTERNSHIP EXPERIENCE

Motive

16-Jun-2025 - 16-Sep-2025

Sybrid Pvt Ltd

10-Jun-2024 - 09-Sep-2024

FINAL YEAR PROJECT

AI-Driven UAV System for Disaster Response and Real-Time Rescue Operations

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Experience in developing and evaluating machine learning and deep learning models, including computer vision, model training, evaluation, and deployment for real-world applications.

Intelligent Systems & Robotics

Hands-on experience with autonomous systems, computer vision, and simulation-based development through academic projects and research work.

Software Development & Web Technologies

Experience in designing and developing full-stack applications, building RESTful backends, working with databases, and implementing clean, maintainable code through academic projects and internships.

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PROFESSIONAL PROFILE

Software Engineering undergraduate with strong skills in Java and Spring Boot, experienced in building RESTful backends using modern software engineering practices. Focused on clean, scalable code and real-world problem solving.

EDUCATION

BESE

SEECS , Islamabad (2026)

INTERNSHIP EXPERIENCE

Backstage

01-Jun-2025 - 31-Aug-2025

Mantained the already written Spring Boot backend code. Added multiple features like messaging, profile management. Refactored code for better readablity and efficiency. Wrote Swagger documentation for the APIs.

FINAL YEAR PROJECT

Deharri

This project aims to design and develop a scalable, hyperlocal, and decentralized digital marketplace that connects skilled professionals (such as electricians, plumbers, carpenters, mechanics, etc.) with individuals and businesses seeking their services. The platform will facilitate seamless access, communication, and transaction between service providers and seekers without acting as a centralized agency. In Pakistan, skilled labor is abundant but underutilized due to the lack of an effective, trust-driven platform that connects them directly with consumers. Existing digital service platforms typically employ workers under their own agencies and offer limited flexibility and independence to freelancers. This results in an inefficient and constrained service economy. To bridge the gap between Pakistan’s untapped skilled labor force and the increasing demand for trustworthy services by offering a decentralized, self-operating platform for both B2B and B2C users.

TECHNICAL EXPERTISE

Java Backend Developer

Java Backend Developer with a strong foundation in Java backend development, experienced in developing REST APIs with Spring Boot and working with both relational and non-relational databases, also having experience with cloud technologies and microservices architecture. Passionate about learning and building ...

Asma Saeed Ahmed

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PROFESSIONAL PROFILE

Final-year Software Engineering student at NUST with hands-on experience in **LLM-based systems, backend engineering, and database-driven applications**. Worked on an **AI-powered OBE assessment platform** using **LLMs, Django, and PostgreSQL** to automate assessment creation and grading with a focus on scalability and accuracy. Industry exposure through a **MedTech internship at NovaTechX**, contributing to RFP development and software architecture for secure medicine management systems in rural hospitals. Strong problem-solving skills with a growing interest in **AI-assisted systems, backend development, and scalable software design**.

EDUCATION

Bachelor of Engineering in Software Engineering

SEECS , ISLAMABAD (2026)

INTERNSHIP EXPERIENCE

NovaTechX Islamabad

01-Jul-2025 - 31-Aug-2025

Contributed to the Request for Proposal (RFP) for a MedTech smart medicine cabinet aimed at improving medication security and automated logging in rural hospitals. Worked on software design and system architecture for a mobile application supporting automated access logs, theft prevention, and safety compliance. Analyzed real-world challenges in healthcare infrastructure, particularly around medicine theft and lack of digital audit trails. Collaborated with cross-functional teams to align technical solutions with business and operational requirements.

FINAL YEAR PROJECT

OBE-Assess: AI-Powered Outcome-Based Education Assessment System

Addressed inefficiencies in manual assessment creation and subjective grading in OBE systems using an LLM-driven automation approach Integrated Gemini-3 open-source LLM for CLO-aligned question generation and AI-assisted descriptive answer marking Designed backend services using Django and REST APIs to manage assessments, rubrics, and evaluation workflows Built a scalable foundation for AI-assisted assessment systems aligned with accreditation requirements

Academic projects : FarmPreneur – Digital Marketplace for Women Entrepreneurs

Engineered a MERN-based marketplace to digitally empower rural women entrepreneurs by enabling product showcasing and business access. Improved system performance and scalability through backend optimization, reducing response time by 40%.

Academic Projects:Vid-City – Cloud-Based Video Streaming Platform

Developed a cloud-based, microservices-driven video streaming platform to support scalable content delivery. Implemented service-level communication and backend workflows to handle streaming requests efficiently.

Academic Projects: Real-Time Sign Language Recognition & Translation

Engineered a real-time accessibility MVP that translates sign language into text and audio for disabled users using computer vision. Optimized latency for live video processing, demonstrating the ability to handle continuous data streams

TECHNICAL EXPERTISE

LLM & Generative AI

Retrieval-Augmented Generation (RAG) | Fine-Tuning | Quantization | Embeddings | Vector Databases | LLM API Integration | Inference Optimization |

Framework& Tools

MERN | REST APIs | Django | Keras | TensorFlow | Pytorch

System Programming

C | C++ | JAVA | PYTHON | JAVASCRIPT | FLUTTER/DART

Version Control

Git | GitHub

Tehreem Ahmad

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PROFESSIONAL PROFILE

Highly motivated **Software Engineering student** with a **3.59 CGPA** and extensive experience in **Full-Stack Web Development (MERN)** and **Game Development**. Proven track record of delivering robust technical projects, including AI-powered platforms and microservices-based streaming applications.

EDUCATION

Software Engineering

School of Electrical Engineering and Computer Sciences , Islamabad , 3.59 (4)

INTERNSHIP EXPERIENCE

Power Planning and Monitoring Company

01-Aug-2025 - 15-Sep-2025

Developing AI powered web applications for the Ministry of Energy

Al-Flah Lubricants PVT LTD

06-Jan-2025 - 29-Jun-2025

Executed end-to-end development of the company website using the MERN stack combined with domain hosting and interactive design.

MLABS Studio

03-Jun-2024 - 31-Aug-2024

Developed Unity-based projects and created a functional game APK approved by industry experts. Learned about game design, graphics, and tool support.

FINAL YEAR PROJECT

Smart AgriAssist: AI-Powered Crop Disease Detection and Market Advisory System for Small Farmers in Pakistan

Develop an AI-driven mobile/web platform that helps small-scale Pakistani farmers: Diagnose plant diseases via images (e.g., from phone camera) Get real-time market price updates for crops in their region Receive recommendations for treatments, fertilizer use, and best practices View weather updates for irrigation planning and crop protection

TECHNICAL EXPERTISE

Languages and Tools

TypeScript, Python (nltk, scikit-learn, gymnasium), JavaScript, MySQL, HTML,CSS, JS

Frameworks

Laravel, MERN, TensorFlow, PyTorch, Flutter

Cloud and DevOps

Google Cloud Platform (GCP), Kubernetes, Docker, GitHub, Vercel, Netlify.

Design/Wireframes
Figma, Unity, Affinity

Muhammad Saad Umer

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PROFESSIONAL PROFILE

I am an AI Engineer and Researcher dedicated to bridging the gap between theoretical Deep Learning and production-grade agentic systems. With a foundation in research from NUST and a deep specialization in Large Language Models (LLMs), my work focuses on building "thinking" systems that go beyond simple API wrappers.

My expertise lies in architecting high-performance AI systems using a modern stack of **FastAPI, React, and Vector Databases**. I specialize in developing advanced **Retrieval-Augmented Generation (RAG)** pipelines that utilize hybrid search and re-ranking to solve the "hallucination" problem in document-heavy environments.

Recently, I have focused on:

- **Model Specialization:** Fine-tuning reasoning models like **DeepSeek-R1** using **Unsloth and QLoRA** to align LLMs with specialized domains, such as Cognitive Behavioral Therapy (CBT).
- **Agentic Workflows:** Designing autonomous agents with **LangChain** and **n8n** that can reason through multi-step tasks, utilize external tools, and self-correct.
- **Production Deployment:** Building asynchronous backends capable of handling low-latency AI inference and streaming responses for seamless user experiences.

I am driven by the challenge of creating AI that is verifiable, scalable, and capable of autonomous reasoning. I am currently seeking opportunities to apply my skills in RAG architecture and model fine-tuning to build the next generation of intelligent applications.

EDUCATION

B.E. Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.24 (2026)

INTERNSHIP EXPERIENCE

NUST (College of Aeronautical Engineering)

01-Jun-2024 - 14-Aug-2024

Project: High-Performance Multi-Stream Surveillance System Developed a 2,000+ line production-grade codebase for a surveillance system capable of processing 20+ simultaneous camera streams. Optimized the system to achieve sub-second mean latency across all streams, ensuring real-time operational capability. Authored and published research findings in IEEE ICoDT2 2025 based on the architectural innovations of this system. Engineered a local, noisy audio transcription application using PyQt5 and OpenAI Whisper, optimized for low-resource hardware deployment.

Machine Vision and Intelligent Systems Lab

19-Sep-2024 - 01-Jun-2025

Specialization: LLMs in Cheminformatics Conducted advanced research into the intersection of Large Language Models and chemical data processing. Published a First Author review paper in a high-impact factor (IF: 12) journal, establishing a comprehensive framework for LLM applications in Cheminformatics. Collaborated on the development of intelligent vision systems, focusing on the transition from traditional CV to modern transformer-based architectures.

NationalAerospaceScience & Technology Park (NASTP) Simulator Division

01-Jul-2025 - 01-Aug-2025

Project: Neural Packet Loss Concealment (PLC) Developed an LM-based packet loss concealment model to improve audio/data transmission quality in simulated environments. Leveraged Meta's EnCodec architecture to power the model, focusing on efficient neural audio compression and reconstruction. Achieved State-of-the-Art (SOTA) competitive performance while maintaining a lightweight footprint of <100M parameters, optimized for real-time simulator constraints.

FINAL YEAR PROJECT

Disrupting Deepfakes Through Adversarial Attacks

Objective: Developed a defensive framework to protect digital identity by proactively "poisoning" images against malicious Deepfake manipulation. Technical Stack: Engineered the entire pipeline using PyTorch, focusing on the generation of adversarial perturbations that are imperceptible to humans but catastrophic for generative AI models. Attack Methodologies: Implemented and optimized multiple adversarial attack vectors, including Projected Gradient Descent (PGD) and Carlini & Wagner (C&W), specifically adapted for the constraints of proactive image defense. Target Architectures: Successfully demonstrated the disruption of state-of-the-art diffusion and image-to-image translation models, including FLUX, Kontext Dev, and InstructPix2Pix.

TECHNICAL EXPERTISE

AI Engineer

Expert in building Agentic RAG systems using LangChain, LlamaIndex, and n8n. Specialist in fine-tuning reasoning models (DeepSeek-R1-Distill) via Unsloth and QLoRA. Proficient in PyTorch, TensorFlow, Keras and scikit-learn. Architecting asynchronous, low-latency backends with FastAPI and Python (Asyncio). Con ...

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PROFESSIONAL PROFILE

High-impact AI Developer and Software Engineer with a proven track record of bridging the gap between complex research and scalable production environments. Expert in designing and deploying **Deep Reinforcement Learning (DRL)** frameworks and **LLM-driven architectures**, including RAG and GraphRAG pipelines. Backed by a strong publication record in **6G and wireless optimization**, I specialize in building "model-driven" AI that prioritizes efficiency, robustness, and mathematical grounding. Whether architecting **cloud-native microservices** on AWS or fine-tuning **computer vision models**, I deliver end-to-end intelligent systems that solve real-world high-dimensional problems.

EDUCATION

Software Engineering

SEECS , Islamabad , 3.51 (4)

INTERNSHIP EXPERIENCE

SKAI worldwide

01-Apr-2025 - 01-Oct-2025

Cloud-Native Microservices Integration: Architected and maintained scalable backend services using Flask, seamlessly integrated with a high-performance React.js frontend to support large-scale enterprise workflows. Enterprise Graph Database Tooling: Engineered a production-grade management interface for AgensGraph (extending pgAdmin functionality). Implemented complex cloud-based data operations, including vertex/edge management and property indexing to handle high-velocity graph data. Security & Access Control: Designed and deployed robust access control layers and secure backend connection management, ensuring data integrity and compliance within a distributed cloud environment. Query Engine Optimization: Optimized the execution of Cypher queries by implementing advanced syntax validation and backend connection pooling, significantly reducing latency for complex data relationships.

Esper Solutions

01-Feb-2025 - 01-Apr-2025

End-to-End Vision Pipelines: Developed a modular, PyTorch-based production pipeline that automated the transition from raw image data to precise human body measurements, utilizing cloud-scalable post-processing scripts. Cloud-Benchmarked SOTA Models: Spearheaded a comparative analysis of state-of-the-art segmentation and keypoint detection models, benchmarking performance metrics (mAP, latency) to select optimal architectures for cloud deployment. Advanced Model Fine-Tuning: Enhanced measurement accuracy and background subtraction robustness by fine-tuning pose estimation architectures, focusing on model generalization for diverse real-world datasets. Hybrid AI Architectures: Pioneered a hybrid approach combining mathematical optimization with deep learning predictors, creating a more reliable and "interpretable" AI system capable of handling high-dimensional measurement tasks in production environments.

IPT Lab

01-Feb-2025 - 31-Jan-2026

Architecture of Physics-Informed AI: Engineered and deployed physics-grounded mathematical models to optimize high-dimensional wireless systems, integrating non-linear energy harvesting and CSI uncertainty into robust ML training pipelines. High-Fidelity Digital Twin Development: Built and maintained enterprise-grade "Digital Twin" simulation environments using Sionna and Ray, enabling realistic cloud-based modeling of multi-antenna links, mobility dynamics, and massive-scale RIS configurations. Structure-Aware DRL Engineering: Designed and implemented structure-aware Deep Reinforcement Learning (DRL) controllers for real-time system optimization. Shifted from "black-box" approaches to model-driven policy design, increasing decision-making reliability and computational efficiency. Distributed Control Systems (MARL & Federated): Developed and benchmarked Hierarchical and

Federated AI architectures against analytical baselines, ensuring high-availability and decentralized control across distributed network nodes. End-to-End Simulation Pipelines: Developed automated, reproducible simulation and benchmarking pipelines using Docker and Python (NumPy/Pandas) to translate complex wireless literature into high-performance, peer-reviewed algorithmic solutions. Multi-Objective Optimization: Engineered hybrid systems to manage Rate-Energy-Sensing tradeoffs in Integrated Sensing and Communication (ISAC) networks, focusing on minimizing latency and maximizing energy efficiency in production-constrained environments.

FINAL YEAR PROJECT

Optimization of NOMA-Enabled Backscatter Communication Using Deep Reinforcement Learning in Diverse RIS-Aided Wireless Systems

This project develops a next-generation wireless framework that integrates Integrated Sensing and Communication (ISAC), Backscatter Communication (BackCom), and Non-Orthogonal Multiple Access (NOMA) to meet the ultra-dense, energy-constrained demands of 6G. By utilizing Beyond Diagonal Reconfigurable Intelligent Surfaces (BD-RIS) and practical non-linear energy harvesting models, we optimize spectrum efficiency and energy sustainability for low-power IoT networks. A core component of our work is the deployment of Agentic AI via Deep Reinforcement Learning (DRL). Rather than relying on static algorithms, we utilize autonomous DRL agents (including TD3, SAC, and PPO) that function as intelligent decision-makers. These agents adaptively manage reflection coefficients, power allocation, and beamforming to maximize throughput and sensing accuracy while preventing energy outages in dynamic environments. Finally, acknowledging the shift from bit-level to intent-based exchange, the project incorporates Security-Aware Semantic Communication. We propose a resilient framework to protect AI models and shared knowledge bases against generative-AI-powered adversaries, ensuring that the "meaning" of transmitted data remains intact and secure in mission-critical applications like Smart Cities.

TECHNICAL EXPERTISE

Deep Learning and AI

I specialize in Deep Reinforcement Learning (DRL), with extensive experience designing and benchmarking advanced algorithms like SAC, TD3, PPO, and RSAC for complex, high-dimensional control tasks. My expertise extends to Generative AI, where I have built RAG and GraphRAG pipelines using Neo4j and LangChain, ...

Backend

I have a strong background in architecting cloud-native microservices using Spring Boot, Flask, and FastAPI. My database expertise includes relational (PostgreSQL), NoSQL (MongoDB), and Graph databases (Neo4j, AgensGraph), specifically optimizing complex Cypher queries and managing large-scale production code ...

Cloud and DevOps

I am proficient in deploying scalable AI and web services on AWS (EC2, Lambda, S3) and Google Cloud. I leverage Docker for containerization and Celery/Redis for distributed task management, ensuring high availability and efficient resource utilization for both research and production environments.

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PROFESSIONAL PROFILE

I am a full-stack software engineer with hands-on experience building and scaling production systems used by thousands of users, with a strong focus on cloud infrastructure, backend architecture, and automation. I have led cost-optimization and infrastructure migrations on Google Cloud in direct collaboration with Google's regional engineering teams, achieving up to 70% reduction in operational costs. My work spans large-scale logistics automation, secure distributed systems, and database architecture, including zero-downtime migrations, cross-border order flows, and performance-driven schema design. I have delivered revenue-enabling systems such as voucher and promotion platforms, implemented end-to-end security using custom authorization layers, and built resilient pipelines that significantly improve operational efficiency. Beyond engineering execution, I work closely with founders, stakeholders, and international partners to translate business needs into scalable technical solutions, while consistently resolving high-impact production issues and improving key business metrics.

EDUCATION

BESE

SEECS , Islamabad , 3.23 (2022)

INTERNSHIP EXPERIENCE

Markaz YC W22

28-Mar-2025 - 01-Jan-2026

I worked closely with the Google Cloud team from the Singapore region to migrate infrastructure to GCP, reducing operational costs by 70%. I engineered large-scale integrations with international logistics partners, including Speedaf, automating thousands of cross-border orders and designing end-to-end China order flows through direct collaboration with Chinese 3PL stakeholders. I architected and deployed a Voucher Management System with Zong CMPAK, unlocking new revenue streams and promotional capabilities. I secured the entire codebase using custom Lambda authorizers and robust SQL protection mechanisms, safeguarding the platform against attacks. I also automated supplier onboarding pipelines, doubling operational efficiency, optimized database schemas to support scalable product variations, and built dynamic per-status messaging features in close collaboration with founders to significantly enhance customer experience. On a daily basis, I resolved critical customer service and engineering issues impacting thousands of active users, and improved delivery success rates for the top-selling category by 9%, directly contributing to higher profit margins and increased earnings for underprivileged communities.

FINAL YEAR PROJECT

Sedata Ai

A developer first observability and security evaluations platform. https://app.sedata-ai.tech

TECHNICAL EXPERTISE

Full Stack Engineer (Backend heavy)

I bring strong technical expertise across backend systems, cloud infrastructure, and modern web technologies. My core strengths include designing secure and scalable APIs, building serverless and event-driven architectures, and working with both SQL and NoSQL databases such as PostgreSQL, MongoDB, and Supabas ...

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PROFESSIONAL PROFILE

High-performing Software Engineering student at NUST with a deep technical stack spanning Agentic AI systems and Full-Stack development. Experienced in merging conversational AI with workflow automation to drive operational efficiency, notably through projects like Ignitic AI and voice-activated PoS systems. Strong expertise in Docker, Kubernetes, and GCP, with a commitment to building secure, scalable, and AI-driven applications.

EDUCATION

Software Engineering

SEECS , Islamabad , 3.45 (4th year)

INTERNSHIP EXPERIENCE

Betafits

02-Nov-2025 - 31-Jan-2026

* Worked on developing modules of Betafits CRM using LangGraph, Supabase, and Airtable. * Followed a complete agile SDLC for planning and execution. * Developed comprehensive state management for LangGraph using state checkpointers. * Handles the episodic and profile based memory in knowledge graphs using Graphiti and Neo4j

Zayup Communications

16-Nov-2024 - 06-Jan-2026

* Developed a multi restaurant PoS SaaS, microservices based on typescript and GraphQL communicated by NATS and RabbitMQ, windows/android app in Flutter with receipt printer integration, leading a team of 5. Deployed backend on GCP cloud run with custom domains and also on in-house server with Kubernetes and Nginx. * Developed an order taking voice agent in Vapi connecting to the restaurant's CRM using a custom MCP server including features for menu exploration (keyword + semantic search), order validation and acceptance. Developed multi-tenant based architecture to allow multiple PoS vendor integrations and ensure scaling via adapters and polymorphism patterns. Deployed MCP server on Render for production.

MachVis Lab SEECS

01-Jun-2024 - 31-Aug-2024

* Developed an Automated Number Plate Detector desktop app in PyQt6. * Finetuned Yolov5 on custom dataset * Used TrOCR for text detection

FINAL YEAR PROJECT

Ignitic AI

This project focuses on building and deploying an AI super agent to automate and streamline key e-commerce operations. Accessible via web, Slack, or Discord, the agent combines advanced AI with n8n-powered workflows to manage a wide range of tasks. Core functions include orchestrating sales and marketing campaigns, lead generation, product research, and automating tasks through integrations with major e-commerce and third-party tools. This initiative highlights the transformative impact of merging conversational AI with workflow automation to enhance operational efficiency

TECHNICAL EXPERTISE

AI Engineering

Have experience in developing AI agents, building MCP servers, creating intelligent RAG pipelines, building custom Voice agents, integrating AI in CRMs, fine tuning LLMs, generating synthetic data, utilizing and training machine learning algorithms, building automations using no code tools and effective promp ...

Full Stack Development

Frontend: developing end to end apps in Flutter. Backend: developing server side apps in FastApi, Node.js, express.js etc, using ORMs for SQL databases like PostgreSQL, MySQL etc, using No-SQL dbs, implementing authentication and caching, working with Async libraries, following design patterns, data resolutio ...

Haris Rehman

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PROFESSIONAL PROFILE

I am an **AI/ML Engineer and Technical Product Manager** with a B.Sc. in Software Engineering from NUST. I specialize in bridging the gap between technical engineering and product strategy by translating user insights into scalable AI solutions deployed across cloud and on-prem environments. My hands-on experience includes developing high-precision **Computer Vision** systems and **Deep Learning** models, such as an automated fiber alignment system with 5-micrometer precision and real-time action recognition for smart retail. Beyond model development, I am an expert in **MLOps**, utilizing **Docker Swarm, Kubernetes, and CI/CD pipelines** to optimize inference speeds and orchestrate distributed GPU training. Currently, I am driving data-informed product decisions as an **Associate Product Manager** at VyroAI while maintaining a strong technical portfolio in **Generative AI** and multimodal research.

Here's my portfolio website: https://harisrehman.tech

EDUCATION

BESE 13-A

SEECS , Gujranwala , 3.22/4 (2026)

INTERNSHIP EXPERIENCE

Vyro AI

20-Oct-2025 - 13-Jan-2026

VyroAI – Chatly | Associate Product Manager | October 2025 – Present I drive data-informed product decisions by implementing event tracking through GTM and Mixpanel, while automating user feedback reporting. I collaborate cross-functionally with Engineering, SEO, and QA teams to identify user pain points and prioritize features that improve retention. I lead growth initiatives by creating SEO-optimized Help Center content and branded product assets to enhance visibility. I support platform monetization and reliability by troubleshooting Stripe billing integrations and assisting with QA automation.

Cowlar YC W-17

29-Apr-2024 - 30-Mar-2025

Cowlar Design Studio (YC W-17) | Machine Learning Engineer | April 2024 – April 2025 I automated factory processes for an Amazon-partnered supplier, boosting production capacity by 40x (from 240 to 9,600 cables monthly). I developed a vision-based system to align fibers with 5-micrometer precision and integrated ML/CV into a Fiber Organizer Robot achieving 96% accuracy. I pushed AI solutions to production by establishing CI/CD pipelines with Docker and load balancing deployment servers using Nginx. I optimized model inference speeds from 200ms to less than 100ms per request through nvidia-enabled dockerization and dimensionality reduction. I built real-time action recognition for Smart Carts (95% accuracy) and implemented Azure OpenAI chatbots
to enhance retail customer experiences. I architected distributed GPU compute environments using Docker Swarm, enabling model training that is 3–4 times faster.

FINAL YEAR PROJECT

FleadrAI

Developing an AI-driven lead generation and engagement system that automates over 70% of the lead lifecycle by integrating large language models with a dynamic “Lead Memory Vault” for personalized outreach. Building a web crawler using headless browsers to scrape and populate a multi-zone, read-replicated database with high-quality leads. Designing the user interface in React and configured an MCP server to integrate with third-party services, utilizing DSPy for prompt optimization and ACP for agent-to-agent communication between help and actionable call modules. To implement scalable CI/CD pipelines, containerization, version control,

and GitHub-based collaboration for efficient deployment and teamwork.

TECHNICAL EXPERTISE

Technical Expertise

I specialize in AI/ML Engineering and Technical Product Management, focusing on building and deploying scalable Computer Vision and Deep Learning solutions. My expertise bridges the gap between high-level engineering and product strategy, allowing me to translate data insights into production-ready AI. AI, ...

Umar Farooq

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PROFESSIONAL PROFILE

Building intelligent AI systems and web applications that automate workflows, enhance decision-making, and deliver measurable impact. Passionate about turning AI innovations into practical solutions that improve efficiency, drive business value, and enhance user experiences.

Key Highlights:

- Designing and implementing **machine learning, Natural Language Processing and Computer Vision solutions** to solve real-world problems.
- Leveraging **AI tools and frameworks** such as **LangChain, LangGraph, Agent Development Kits, and Open/ Closed Source Models** to build intelligent, automated workflows.
- Developing **full-stack web applications** using **Next.js, React, NestJS, FastAPI, ExpressJS, MongoDB and PostgreSQL** to integrate AI seamlessly.
- Structuring **scalable systems and microservices** for high performance and reliability.
- Focused on creating **AI-powered products** that make work smarter, faster, and more effective while delivering tangible business results.

EDUCATION

Software Engineering

National University of Sciences and Technology - School of Electrical Engineering and Computer Sciences, H-12 , Islamabad , 3.32 (2026)

INTERNSHIP EXPERIENCE

RoadGauge Ltd

01-Jul-2024 - 29-Dec-2024

- Developed end-to-end computer vision pipelines for road condition assessment using Python and OpenCV. - Implemented crack detection, defect localization, and deterioration tracking on large-scale GoPro video datasets. - Implement image processing techniques in OpenCV to reduce defect localization latency by 96% in duplicate defect identification and anlysis. - Collaborated in a team of Computer Vision Engineers to build image processing based road infrastructure evaluation mechanism.

China Pakistan Intelligent System Lab

02-Jun-2025 - 07-Sep-2025

- Designed and developed a full-stack AI-driven recruitment automation platform using NestJS, FastAPI, MongoDB, and Next.js. - Integrated LLM-powered resume screening, candidate ranking, and interview intelligence using OpenAI and Gemini APIs. - Built a real-time, full-duplex voice AI interviewer using WebRTC and OpenAI Realtime APIs for human-like interviews. - Implemented asynchronous workers and orchestration pipelines for AI scoring, scheduling, and candidate lifecycle automation. - Focused on scalability, low-latency inference, and production reliability for real-world hiring workflows.

FINAL YEAR PROJECT

HRXpert - Automating Talent Acquisition using Artificial Intelligence

Built HRXpert, a full-stack AI recruitment automation platform covering job posting, application tracking, AI based resume scoring, AI driven interviews, GitHub profile evaluation, automated recruiter workflows, scheduling, notifications, and ATS-style hiring pipelines. - Built agentic AI interviewers (voice/text) with JD-aware questioning, follow-ups, and AI GitHub/code evaluation using Large Language Models, LangChain and LangGraph. - Architected scalable microservices using NestJS & FastAPI, RabbitMQ for async evaluation pipelines, and MongoDB for core application data. - Delivered a production-ready system with Next.js frontend, REST/WebSocket APIs, Firebase auth, AWS (EC2, S3, IAM) deployment, and extensible ATS/API integrations.

TECHNICAL EXPERTISE

Artificial Intelligence

Designing and implementing AI systems and agentic workflows that automate processes and enhance decisions. Skilled in LLM-based systems, RAG, generative AI, multi-agent frameworks, prompt engineering, real-time interactions, reinforcement learning, and AI orchestration. Proficient with LangChain, LangGr ...

Machine Learning

Building and deploying ML and deep learning pipelines for structured and unstructured data. Experienced in model development, transfer learning, optimization, hyperparameter tuning, and automated ML workflows. Tools: PyTorch, TensorFlow, Keras, Scikit-Learn, Ultralytics, YOLO, XGBoost, OpenCV, Pandas, NumPy, ...

Backend Development

Skilled in API design, microservices, REST, real-time systems, auth, queue-based architectures, and async processing. Proficient with NestJS, FastAPI, Node.js, ExpressJS, Python, TypeScript, MongoDB, PostgreSQL, Redis, RabbitMQ, Docker, with experience in DB design, caching, AI/ML integrations, and service or ...

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PROFESSIONAL PROFILE

Machine Learning Engineer and final-year Software Engineering student at NUST, with strong **industry and research experience** in artificial intelligence, computer vision, and scalable machine learning systems. Experienced in building **production-ready, low- latency ML pipelines** and deploying **end-to-end AI solutions** in real-world environments.

- **Technical Expertise:** PyTorch, TensorFlow, Transformers, GANs, Computer Vision, NLP, Vector Databases
- **MLOps & Cloud:** AWS (Lambda, SQS, EC2, API Gateway, ALB, ASG), Docker, CI/CD, GPU acceleration (TensorRT)
- **Systems & Performance:** Multithreaded pipelines, queue-driven architectures, parallel CPU/GPU execution, inference optimization
- **Applied Research:** Autonomous AI agents, adaptive web interaction, reinforcement learning, temporal event detection

Proven ability to bridge **research and production**, having reduced inference latency by ~40% in deployed systems and delivered scalable ML solutions across cloud-native architectures. Actively researching **autonomous AI agents and adaptive web interaction**, with a strong passion for applying cutting-edge AI research to solve complex, real-world problems with measurable impact.

EDUCATION

BESE (Bachelors Of Software Engineering)

School of Electrical Engineering and Computer Sciences (SEECS) , Islamabad , 3.65 (2026)

INTERNSHIP EXPERIENCE

Pineamite Limited

01-Dec-2024 - 09-Jan-2026

1. Designed and optimized multithreaded, queue-driven ML pipelines enabling parallel CPU and GPU execution, achieving ~40% reduction in end-to-end inference latency. 2. Built and deployed scalable, cloud-native ML workflows on AWS for UK rally car racing telemetry using Lambda, SQS, API Gateway, EC2, ALB, ASG, and containerized services. 3. Developed a temporal event-detection model using Transformer Encoder architecture to accurately localize critical racing events from time-series data. 4. Implemented GPU acceleration and inference optimization using TensorRT to improve performance in production environments. 5. Applied MLOps best practices including version control, containerization, automated deployment, and monitoring.

Made IT

01-Jun-2024 - 31-Aug-2024

1. Developed an AI-powered semantic search platform supporting text-based, image-based, and hybrid queries. 2. Utilized OpenAI CLIP embeddings and Milvus vector database for efficient multimodal retrieval. 3. Designed similarity scoring using weighted fusion of text and image embeddings to improve search relevance. 4. Conducted experiments and evaluations to validate retrieval accuracy and system performance. 5. Developed a facial recognition system using Cosine similarity and Siamese network

NCAI TUKL Deep Learning Research Lab

01-Jun-2024 - 31-Aug-2024

1. Contributed to squash court ball tracking, addressing challenges such as occlusions and false positives through advanced augmentation and tracking techniques. 2. Implemented and evaluated image processing and tracking pipelines, orchestrating end-to-end evaluation scripts. 3. Developed a Pix2Pix GAN for generating building designs from sketches. 4. Improved image quality by

modifying the generator architecture, replacing Batch Normalization with Instance Normalization to eliminate visual artifacts.

FINAL YEAR PROJECT

Adaptive Web Interaction: Leveraging Reinforcement Learning for Comprehensive Action Support

The project aims to develop an adaptive web interaction system that uses Reinforcement Learning (RL) to intelligently support user actions across web platforms. The system will observe user behavior, learn optimal action strategies (like clicks, form fills, navigation), and dynamically suggest or automate tasks to enhance user experience. By leveraging RL algorithms (e.g., DQN, PPO, GRPO), the model will continuously adapt to new interfaces and user preferences, offering comprehensive and personalized interaction support for complex web tasks.

TECHNICAL EXPERTISE

Machine Learning & Deep Learning

I have a strong foundation in machine learning and deep learning, with hands-on experience building, training, and optimizing models for real-world applications. My work spans supervised, self-supervised, and representation learning, with a focus on performance, scalability, and practical deployment.

Computer Vision

I have worked extensively on computer vision problems including object tracking, facial recognition, image-to-image translation, and visual representation learning. My experience includes handling occlusions, false positives, and data augmentation strategies, as well as implementing GAN-based architectures fo ...

Natural Language Processing (NLP)

I have built NLP systems for semantic search, text classification, named entity recognition, and conversational agents. My projects include zero-shot and fine-tuned LLM pipelines, RAG-based applications, and domain-specific chatbots using modern transformer architectures.

Transformers & Generative Models

I have implemented Transformer architectures from scratch to deeply understand attention mechanisms and sequence modeling. Additionally, I have hands-on experience with generative models such as GANs (Pix2Pix) and large language models for text generation, summarization, and reasoning tasks.

AI Agents & Reinforcement Learning

My current research focuses on autonomous AI agents for adaptive web interaction. I explore reinforcement learning techniques to train efficient small language models (SLMs) capable of real-time decision-making and generalization across dynamic web environments.

Cloud & Distributed Systems

I have designed and deployed scalable cloud-based systems using AWS services such as EC2, Lambda, SQS, API Gateway, ALB, and Auto Scaling Groups. I am comfortable architecting distributed, fault-tolerant systems for data processing and real-time inference.

Semantic Search & Vector Databases

I have designed multimodal semantic search systems supporting text and image queries using embedding models like CLIP. I have experience integrating vector databases such as Milvus to enable fast, scalable similarity search for production-grade applications.

MLOps & Model Deployment

I have practical experience deploying machine learning systems in production environments. This includes building automated ML pipelines, containerized services, and optimizing inference using multithreading, GPU acceleration, and tools like TensorRT to significantly reduce latency.

Backend Systems & Microservices

I have built backend systems using microservices architectures, with services communicating over HTTP and deployed via containerization. My experience includes designing APIs, managing service orchestration, and deploying serverless and container-based applications on cloud platforms.

Programming & Software Engineering

I have strong programming skills in Python, along with experience in C, C++, and Go fundamentals. I follow sound software engineering practices, including modular design, version control with Git, testing, and writing maintainable, production-ready code.

Data Structures & Algorithms

I have a solid understanding of data structures and algorithms, applied in both academic and practical projects. I have implemented custom ranking and search algorithms capable of handling large-scale datasets efficiently and solving problems under tight performance constraints.

Muhammad Ammar Shahzad

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PROFESSIONAL PROFILE

Software Engineering undergraduate at NUST with a strong focus on artificial intelligence and machine learning, complemented by solid experience in full-stack and systems development. Skilled in building and deploying intelligent applications using PyTorch, TensorFlow, and modern web technologies, with hands-on research experience in adversarial learning and deep neural networks. Brings a strong mathematical foundation, practical problem-solving ability, and experience translating research and engineering concepts into scalable, real-world solutions.

EDUCATION

BESE

School of Electrical Engineering and Computer Sciences (SEECS) , Islamabad , 3.5 (2026)

INTERNSHIP EXPERIENCE

GoSaaS Inc.

02-Jun-2025 - 13-Jul-2025

• Developed full-stack features for a containerized log management platform using Node.js, TypeScript, and Oracle JET, including a user settings module and secure OAuth 2.0 authentication. • Containerized the application stack using Docker and Docker Compose to streamline development and deployment workflows. • Implemented Redis-based notification queues to monitor log thresholds and trigger real-time alerts based on application logic. • Collaborated in Agile sprints, participated in daily stand-ups, and managed Git workflows including branching, rebasing, and conflict resolution.

TUKL R&D Lab, National University of Sciences and Technology (NUST)

01-May-2024 - 16-Aug-2024

• Conducted research on adversarial attacks targeting deep neural networks, including CNNs and LSTMs. • Implemented and evaluated adversarial techniques such as FGSM and DeepFool to analyze model robustness. • Developed and trained machine learning models for speech classification and language translation tasks. • Built a text-to-speech pipeline converting textual input into audio output using deep learning techniques.

Oz Limited

01-Jun-2023 - 18-Aug-2023

• Designed and implemented homepage recommendation systems using collaborative and content-based filtering techniques. • Applied supervised and unsupervised machine learning algorithms for user personalization. • Integrated trained machine learning models into an Android application for real-time recommendations. • Worked with cross-functional teams to align machine learning solutions with product requirements.

FINAL YEAR PROJECT

RentSight: AI-Powered Profitability Estimation for Short-Term Rental Properties

This project aims to build a general-purpose AI-based application that estimates the profitability of residential properties when rented on short-term platforms like Airbnb. The system will use real estate data—scraped from websites like Zameen.com as a case study—and apply machine learning to predict expected income, occupancy rates, and investment potential. By analyzing factors such as location, price, and property features, the application will provide real estate investors with useful, data-driven insights into short-term rental profitability. This area is still emerging in Pakistan. Although Zameen.com will be used for testing and validation, the system will be scalable and adaptable for different real estate markets. The project holds both academic value and commercial potential.

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Strong experience in artificial intelligence and machine learning, including the design, training, and evaluation of deep learning models such as CNNs, GANs, VAEs, Transformers, and diffusion-based models (including Stable Diffusion). Hands-on work with PyTorch and TensorFlow across domains such as adversaria ...

Backend & API Development

Experience developing scalable backend services using Node.js, TypeScript, and Express.js. Skilled in designing RESTful APIs, implementing OAuth 2.0 authentication, handling secure user access control, and integrating backend services with databases and external systems.

Embedded Systems & IoT Development

Experience developing embedded systems using ESP32 and C for IoT-based applications. Worked with sensor integration, real-time data acquisition, and wireless communication to expose system data through web-based interfaces.

Software Engineering Practices & Collaboration

Experienced in Agile development methodologies, including sprint-based workflows, daily stand-ups, and collaborative development. Proficient with Git version control, branching strategies, code reviews, and resolving complex merge conflicts in team environments.

Faareh Ahmed

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PROFESSIONAL PROFILE

Software Engineering student at NUST specializing in **Machine Learning** & **Computer Vision**. I apply algorithmic optimization and deep learning to analyze complex multidimensional data for autonomous systems. My experience includes international research as a **DAAD Scholar** at RPTU Kaiserslautern, expertise in **LiDAR** technology, and multiple **publications** in high-impact journals.

EDUCATION

Bachelor of Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.31 (2026)

INTERNSHIP EXPERIENCE

Machine Vision and Intelligent Systems Lab

06-Jun-2024 - 25-Jan-2026

Leading LiDAR-based precision agriculture research focusing on 3D point cloud processing. Fine-tuned U-NetFormer for urban green space segmentation and optimized remote sensing algorithms.

Cowlar Design Studio (YC-W17)

10-Jul-2025 - 10-Sep-2025

Conducted market research and customer interviews with restaurant owners to provide data-driven insights for product strategy. Collaborated with engineering teams on product launches

Khiladi

01-Jul-2025 - 01-Sep-2025

Engineered 3D human pose estimation models using MediaPipe to analyze cricket bowlers' actions. Optimized video processing pipelines using Docker and FastAPI for real-time model inference

Oryns Solution

02-Sep-2024 - 03-Jan-2025

Architected the frontend for a full-scale charity and giveaway ecosystem, facilitating user donations and automated reward systems. Developed an Admin Dashboard within the app to manage organizations, monitor live transactions, and oversee giveaway winner selection.

Robotics Research Lab, RPTU Kaiserslautern

22-Jul-2024 - 23-Aug-2024

Research stay funded by a DAAD scholarship. Built a LiDAR-based 3D pipeline for high-resolution feature extraction and wheat yield prediction while practicing multi-sensor integration

FINAL YEAR PROJECT

LiDAR based Plant Phenotyping for Precision Agriculture

Developing a novel UAV-based 3D point cloud generation method using 2D LiDAR, and leading deep learning research for plant biomass estimation and phenotypic trait extraction.

TECHNICAL EXPERTISE

Full Stack Development
Next.js 14, React.js, Tailwind CSS, ShadcnUI, Framer Motion, React Native, FastAPI, MongoDB, Clerk Auth, Git, Docker.

Machine Learning & AI
Deep learning, Transformers, 5G vehicular networks, caching and task offloading, explainable AI (SHAP/XAI), Anomaly detection

Computer Vision & 3D Imaging
3D point cloud processing, Transformer-based U-Net segmentation, remote sensing imagery, 3D human pose estimation, kinematics analysis.

Ali Haider

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PROFESSIONAL PROFILE

Software Engineering undergraduate with practical experience building full-stack web applications using React, Next.js, Django REST Framework, and NestJS. Strong foundation in data structures, databases, and operating systems, with hands-on exposure to real-world systems including REST APIs, real-time communication, and cloud deployment. Demonstrated ability to work in team- based, agile environments and deliver scalable, well-structured solutions while continuously learning modern technologies.

EDUCATION

BE Software Engineering

SEECS - NUST , Islamabad , 2.67 (2026)

INTERNSHIP EXPERIENCE

Search O Pal

20-Apr-2024 - 31-Aug-2024

- Designed and developed a scalable Pre-Screening Test System using Django REST Framework and React, streamlining the recruitment workflow. - Implemented RESTful APIs with pagination, caching, and optimized query handling to support high- concurrency usage. - Built a real-time Group Chat module using Django Channels and WebSockets, enabling live multi-user communication. - Integrated backend event handling using signals to ensure reliable real-time updates. - Collaborated with frontend developers to ensure seamless API integration and data consistency. - Followed clean architecture and best practices for authentication, validation, and error handling. - Gained hands-on experience working in a production environment with agile development workflows.

FINAL YEAR PROJECT

GlacioVision - Modelling Glacier Retreat and Water Security in Pakistan through Remote Sensing Technologies

GlacioVision is a multi-modal deep learning system that predicts future glacier extent and elevation change by fusing remote sensing imagery and climate data. Its primary objectives are: ● Water Resource Planning: Forecasting glacier meltwater availability for agriculture and hydropower. ● Disaster Preparedness: Enabling early warning for floods and glacial lake outburst floods (GLOFs). ● Climate Change Research: Providing data-driven insights into cryosphere changes in the Hindu Kush, Karakoram and Himalaya region.

TECHNICAL EXPERTISE

Frontend Development

Building responsive, high-performance user interfaces using React and Next.js with modern state management, API integration, and accessibility-focused UI practices.

Backend Development

Designing and implementing scalable RESTful APIs using Django REST Framework, NestJS, and Node.js with proper authentication, validation, and error handling.

Real-Time Systems

Developing real-time features such as chat and video communication using WebSockets, Django Channels, and WebRTC.

Database & Data Management

Modeling and optimizing relational databases with SQL and PostgreSQL, focusing on query performance, pagination, and data integrity.

API Design & Integration

Creating and consuming REST APIs, integrating third-party services, and ensuring secure, well-documented backend services.

Cloud & Deployment

Deploying and managing applications on cloud platforms using Linux environments, CI/CD pipelines, Docker, and modern hosting solutions.

Collaboration & Agile Development

Working effectively in team-based agile environments, participating in code reviews, sprint planning, and cross-functional collaboration.

Sameed Ilyas

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PROFESSIONAL PROFILE

Software Engineer with strong experience in **AI-driven systems, full-stack development, and cloud-native architectures**, focused on building scalable, production-grade solutions. Proven ability to design and deliver **end-to-end platforms** integrating machine learning, real-time systems, and modern web technologies. Experienced in developing **AI-powered products, open- source developer tools, and distributed systems**, with demonstrated impact in performance optimization, cost reduction, and team leadership. Recognized for combining **strong engineering fundamentals with applied AI expertise** to solve complex, real-world problems.

EDUCATION

BE Software Engineering

School of Electrical Engineering and Computer Sciences , Islamabad , 3.46 (2026)

INTERNSHIP EXPERIENCE

ONT Lab, SEECS

12-Jun-2023 - 10-Sep-2023

Initiated the implementation of a web application called ONE on top of the ONOS controller, aimed at simplifying the configuration of Open Networks through its graphical user interface (GUI). Conducted research and feasibility analysis to understand the integration requirements and functionalities needed for ONE. Contributed to the development of key features and functionalities in the early stages of the project. Assisted in testing and validating the initial implementation to ensure compatibility and functionality with the ONOS controller. Conducted research and analysis on SDN controllers, specifically focusing on the functionality and capabilities of the ONOS controller.

Grayhat Developers

13-Oct-2025 - 13-Dec-2025

Worked on multiple production-grade and game-oriented systems, contributing across backend, frontend, architecture, and real-time multiplayer features. Integrated and extended real-time multiplayer systems using Playroomkit and led the development of an open-source library, react-hook-form-ai, which gained 1000+ downloads and was featured in Google’s Chrome Built-in AI Challenge.

Oryns Solutions

03-Feb-2025 - 05-Oct-2025

Managed distributed engineering teams for AI-driven mobile and blockchain platforms. Introduced structured documentation, delivery pipelines, and agile processes using Jira and Confluence, resulting in a 50% improvement in project delivery timelines and overall execution efficiency.

AeroSenergy

14-Jul-2025 - 12-Oct-2025

Led a small team to build AI-powered translation, transcription, and scheduling solutions using Next.js and FastAPI. Developed an AI receptionist for medical clinics and optimized backend systems to reduce infrastructure costs by 40% and latency by 20%, while maintaining reliability and model accuracy.

TrioSaf Technologies

21-Jul-2024 - 01-Sep-2024

Developed two full-stack MERN applications with real-time features and API integrations. Delivered a GPT-2–powered chat application and was recognized as Best Intern for strong performance and timely delivery.

FINAL YEAR PROJECT

AI Enhanced SOAR Platform

This project develops an AI-Enhanced Security Orchestration, Automation, and Response (SOAR) platform to improve the efficiency of modern Security Operations Centers (SOCs). The system uses machine learning and natural language processing to intelligently triage alerts, reduce false positives, automate repetitive response tasks, and generate concise incident summaries while keeping analysts in the loop for critical decisions. Built on a modular, cloud-native architecture, the platform integrates seamlessly with existing security tools and continuously improves through analyst feedback. The goal is to significantly reduce response times, analyst workload, and alert fatigue, strengthening organizational cyber resilience and supporting UN SDGs 9 and 16.

TECHNICAL EXPERTISE

Backend and Distributed Systems

Experienced in designing and building scalable backend systems using FastAPI, Node.js, Go, and Spring Boot, with a strong focus on microservices, event-driven architectures, and API-first design. Hands-on experience with real-time systems, background workers, orchestration workflows, and cost-optimized produc ...

Full Stack Web Development

Proficient in React, Next.js, TypeScript, and TailwindCSS for building modern, high-performance user interfaces and dashboards. Strong experience with end-to-end application development, including authentication, billing, role-based access, real-time updates, and production-grade frontend–backend integration.

AI/ML Systems

Practical experience building and deploying ML and NLP-powered applications using PyTorch, TensorFlow, Hugging Face, and OpenCV. Implemented LLM-based workflows, anomaly detection, summarization, and AI-assisted automation across multiple production systems. Deep exposure to model evaluation, optimization, an ...

LLM and AI Tooling

Developed and maintained open-source AI developer tooling, including react-hook-form-ai, leveraging Chrome Built-in AI APIs. Experience with AI agents, prompt-driven workflows, structured outputs, and human-in-the-loop AI systems, with proven adoption and community usage.

Cloud, DevOps and Scalability

Strong background in Docker, CI/CD pipelines, GitHub Actions, and cloud platforms (AWS, Azure, GCP). Experienced in cost optimization, performance tuning, monitoring, and production reliability, achieving measurable reductions in latency and infrastructure cost.

Databases and Data Engineering

Skilled in PostgreSQL, MySQL, MongoDB, Elasticsearch, Redis, and Neo4j, with experience choosing the right storage model (relational, document, graph) for system requirements. Built search-heavy, real-time, and analytics-driven systems with efficient indexing and query strategies.

Real-Time and Event Driven Systems

Hands-on experience with Kafka-style event pipelines, WebSockets, pub/sub systems, and multiplayer real-time architectures. Built systems handling live updates, alert streams, and concurrent users with strong consistency and fault tolerance.

Security, Networking and Systems Research

Foundational experience in SDN, network simulation, and controller-based architectures using NS3, Mininet, POX, and ONOS. Familiar with secure system design, access control, and protocol-level thinking from both research and applied perspectives.

Engineering Leadership and Project Execution

Demonstrated leadership across technical execution, team coordination, and delivery pipelines. Experience managing distributed teams, defining system architecture, maintaining documentation, and delivering complex AI-driven products on tight timelines.

Yousuf Rehan

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PROFESSIONAL PROFILE

Results driven software engineer with strong foundations in backend development and applied machine learning. Experienced in modern web stacks, APIs, and data-driven applications, with an interest in deploying real-world AI systems

EDUCATION

Bachelor of Engineering, Software Engineering

SEECS , Islamabad , 3.6 (2026)

INTERNSHIP EXPERIENCE

Topcar

23-Dec-2024 - 23-Jan-2026

Working directly under the CTO as a Full Stack Engineer, utilizing technologies such as Angular, Next.js, and Node.js to enhance the company's products. Lead the expansion of the platform from a single-country to a multi-country system, ensuring seamless backend, user, and admin integration. Enhanced user experience by implementing error handling in over 30 admin dashboard forms using Angular, reducing admin complaints. Developed and documented a new search API using Node.js and MySQL, increasing query efficiency and enabling smooth migration for other teams.

FINAL YEAR PROJECT

Optimization of NOMA-Enabled Backscatter Communication Using Deep Reinforcement Learning in Diverse RIS-Aided Wireless Systems

This project investigates the optimization of non-orthogonal multiple access (NOMA)-enabled wireless backscatter communication systems using deep reinforcement learning (DRL) enhanced by various types of reconfigurable intelligent surfaces (RIS). Our approach supports a unified, scenario-agnostic framework for jointly tuning key system variables—such as RIS element configurations, transmit power levels, resource-allocation timings, and backscatter parameters—so that different combinations can be deployed on the fly to meet varying performance goals. A DRL-based agent is developed to intelligently adapt to changing channel conditions and user demands, enabling real-time learning and decision-making without relying on explicit mathematical models.

TECHNICAL EXPERTISE

Farhan Kashif

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PROFESSIONAL PROFILE

I am Farhan Kashif, a Final-Year Software Engineering student experienced in delivering AI-powered web solutions. I am passionate about building scalable architectures, leveraging expertise in the MERN stack and Django to optimize deep learning workflows, and with hands-on experience in automation, and secure IoT systems.

EDUCATION

Bachelor's of Engineering in Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.37 (2026)

INTERNSHIP EXPERIENCE

Tensorark

07-Oct-2025 - 29-May-2026

I contributed to EchoPath, an AI-powered calling and appointment-booking assistant, by implementing workflow enhancements in the MERN stack, including PayPal integration and Vonage SIP call-flow updates. Additionally, I worked on Maily, an automated bulk email delivery platform built with FastAPI, where I integrated AI for email formatting, personalization, and tracking analytics.

Syvyo

07-Jul-2025 - 31-Aug-2025

I explored Retrieval-Augmented Generation (RAG) pipelines and experimented with LangChain and LangGraph to build LLM-powered workflows. I also fine-tuned YOLO models for custom object detection tasks, improving detection accuracy for domain-specific datasets. Furthermore, I implemented web scraping and data extraction pipelines to collect and preprocess data for various machine learning tasks.

GoSaaS Labs

16-Jun-2025 - 25-Jul-2025

I built backend RESTful APIs for the Application Management Module and containerized services using Docker to significantly reduce development and deployment timings. On the frontend, I designed and implemented interfaces using OJET, utilizing MVMM architecture and Redwood for UI styling, while gaining significant experience in collaborative development through Trello, Git, and GitHub.

Arbisoft

01-Jul-2024 - 16-Aug-2024

I refined backend integration for audio transcription, which improved live audio-to-text processing time, and built asynchronous pipelines with Redis and Celery to boost system reliability under high load. I also refined WebSocket communication to handle multiple users efficiently and gained significant experience with version control and CI/CD pipelines using Git and GitHub.

FINAL YEAR PROJECT

An Expert-Guided Multimodal AI Ecosystem for Diagnostic Intelligence

For this project, I implemented a MoME+ segmentation backbone enhanced with continual learning techniques, such as EWC and replay memory, to adapt effectively across datasets. I developed a report generation pipeline by fine-tuning domain-specific LLMs, grounded with structured JSON outputs from brain atlas mappings, and built a clinician-friendly web platform using Django and React.

TECHNICAL EXPERTISE

Full Stack Web Development

I specialize in architecting high-performance web applications using the MERN stack, Django, and FastAPI. I have a proven ability to build backend RESTful APIs, manage asynchronous task queues using Redis and Celery, and implement responsive frontends with React, OJET, and JavaScript/TypeScript. Furthermore, ...

Artificial Intelligence & Machine Learning

I specialize in developing AI models, with a specific focus on Computer Vision, Medical Imaging, and Natural Language Processing. I am proficient in using frameworks like PyTorch and TensorFlow to build and train neural networks and fine-tune them. My experience also extends to fine-tuning YOLO for custom obj ...

Cloud & IoT Security

I possess strong capabilities in containerizing applications using Docker for deployment. I am experienced in managing collaborative development lifecycles through Git and GitHub, ensuring efficient CI/CD pipelines. Additionally, I have practical knowledge in designing secure IoT ecosystems, with machine lear ...

Muhammad Sulleman

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PROFESSIONAL PROFILE

I am an individual with great love for learning and deep desire to contribute in solving aspiring problems

EDUCATION

Bachelor of software engineering

Seecs , Islamabad , 2.47 (2026)

INTERNSHIP EXPERIENCE

PQC labs

11-Aug-2025 - 25-Oct-2025

OMDP39, or Optimized Mnemonic Distribution Protocol, is a cryptographic tool for securing BIP39 mnemonic phrases in cryptocurrency wallets. Traditional backups rely on a single phrase, risking total loss from theft or destruction, threatening billions in assets. OMDP39 uses Shamir's Secret Sharing to split the mnemonic into N shares, each as 33 random-looking BIP39 words. Any T shares (T ≤ N) reconstruct the original, while T-1 reveal nothing, offering information-theoretic security. Compatible with 12- or 24-word mnemonics, it supports configurations like 2-of-3 for personal use or 5-of-9 for enterprises, with HMAC checksums for integrity. This eliminates single points of failure, enabling distributed trust and redundancy across locations or parties. Built over GF(2^11) finite field matching the BIP39 wordlist, OMDP39 employs polynomial interpolation for splitting and Lagrange for reconstruction. Shares include a 56-bit header with metadata (version, set ID, N/T params), payload, and 22-bit checksum, totaling 363 bits. Security features cryptographic RNG, constant-time ops, and validations to prevent mixing or tampering. The CLI allows easy share creation/recovery in interactive or batch modes, cross-platform on Linux/macOS/Windows. Use cases include personal backups, family estate planning, corporate governance, and disaster recovery, targeting crypto holders, institutions, and wallet developers in a growing market. During my internship, I implemented the OMDP39 library in Go (v1.19+), developing the core Shamir algorithm with optimized GF(2^11) arithmetic using primitive polynomial x^11 + x^2 + 1. I handled share encoding/decoding, CLI tools for operations, extensive testing, and documentation. Emphasis was on security practices like secure randomness and performance (<1ms ops), setting up for audits, GUI, and hardware integration.

FINAL YEAR PROJECT

EmergeOs

A platform for AI agents workflow generation platform like n8n where developers can register their agents in the registry and get paid when their agent is used by user

TECHNICAL EXPERTISE

Fullstack AI engineer

Frontend: HTML, CSS, JavaScript, Tailwind CSS, shadcn/ui, Next.js Backend: Node.js, Express.js, Python Full Stack: MERN Cloud & Deployment: AWS, GCP, Vercel Databases: PostgreSQL DevOps: GitHub, CI/CD, Docker, Kubernetes AI / LLM: LLM Engineering, LangChain, LangGraph, Hugging Face ML & Data: Machine L ...

Software engineering

Databases , web dev , flutter ,dart , cloud , llms rag vector databases , aws gcp , Ec2 . Software design ,development development

Muhammad Muaz

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PROFESSIONAL PROFILE

Backend Engineer passionate about scalable systems, cloud infrastructure, and DevOps automation.

EDUCATION

Matriculation

Laboratory Higher Secondary School , Faisalabad , 1058/1100 (2020)

Intermediate

Punjab Group of Colleges , Faisalabad , 1046/1100 (2022)

INTERNSHIP EXPERIENCE

Shadiyana

01-Jun-2024 - 31-Aug-2024

Assisted the team in developing features of shadiyana.pk ✓Developed backend apis of new vendor categories to be introduced (Node js) . ✓Collaborated with the frontend team to configure the apis (React & React-Native). ✓Worked on the infrastructure migration of application on AWS.

FINAL YEAR PROJECT

No project information available.

TECHNICAL EXPERTISE

Muhammad Zaid

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PROFESSIONAL PROFILE

Software engineering student at SEECS, NUST with practical experience in developing a variety of software systems. Skilled in building web applications using Golang and JavaScript ecosystems (Node.js, Next.js), with hands-on experience working with PostgreSQL databases, message queuing systems, and RESTful APIs.

I have worked AI chatbot platforms, healthcare data systems, and web applications. I have contributed to projects involving Meta API integrations and data processing workflows. I focus on writing clean, maintainable code and designing solutions that address real user needs.

I have a strong foundation in data structures and algorithms, maintaining consistent practice on competitive programming platforms. I am eager to join engineering teams building meaningful products where I can contribute to backend systems, AI integrations, cloud deployments and data workflows.

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GitHub: https://github.com/muhammadzaid-99

EDUCATION

Software Engineering

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.62 (2026)

INTERNSHIP EXPERIENCE

Zentri AI

03-Oct-2025 - 27-Feb-2026

Contributed to an AI chatbot CRM platform serving businesses with automated customer engagement. Engineered Meta API integrations to capture and process leads from Facebook, Instagram messaging, lead ads, and WhatsApp Business. The integration process involved researching Meta's platform requirements, preparing documentation for app review submissions, coordinating approval workflows, and implementing compliant webhook handlers and API clients once approved. Developed analytics dashboards tracking chatbot performance metrics including impressions and conversions, conversation flows, and user engagement patterns. Integrated Google Analytics with custom events to provide clients with actionable insights on customer interactions. Built backend services to handle webhook events, message parsing, email notifications and data synchronization in the CRM database. Worked with Next.js for frontend interfaces and Node.js/Express for backend API services, with MongoDB database.

Deep Learning Lab (DLL), NCAI

01-Apr-2024 - 30-Mar-2025

Research Assistant Worked on an AI-powered document interaction system for Blue Diamond Austria. Built web interfaces and backend services using Flask and FastAPI to enable document querying through natural language. Contributed to the Retrieval- Augmented Generation (RAG) pipeline, implementing preprocessing workflows and data transformation logic to improve response accuracy. In parallel, I worked towards AI Integrated Healthcare Systems which started off with basic appointments and checkups, later with AI summaries and finally evolving into my final year project. Completed the IBM Full Stack Developer Professional Certificate under the same supervision during this period.

Deep Learning Lab (DLL), NCAI

12-Jun-2023 - 30-Mar-2025

Completed foundational coursework in ML, DL and web engineering (Node.js, Express, REST APIs). Applied these concepts by

building a hospital appointment scheduling system with integrated discussion forums, which informed later work on AI Integrated healthcare platforms.

FINAL YEAR PROJECT

Federated Data Lakes and Intelligent Healthcare Management for Pakistan

Developing a healthcare data platform addressing medical data fragmentation across Pakistani hospitals. Inspired by international data governance initiatives and growing awareness around patient data privacy, the system enables secure data federation while keeping patient data decentralized at individual healthcare centers. The system provides multiple portals for different user roles. Doctors can manage schedules and conduct AI-assisted checkups that help extract clinical information and insights from consultations, patients can book appointments and access their medical history, and administrative staff can oversee operations. The core challenge addressed is enabling nationwide health analytics without compromising patient privacy or hospital autonomy. When researchers need access to data for studies, the system implements temporal, minimum-privilege credentials scoped only to the specific data partitions required for approved queries. This ensures researchers access only what is necessary, and these access rights automatically expire, preventing long-term data exposure. My primary contributions involve building the data federation layer using Golang to orchestrate ETL pipelines with PySpark for transforming operational healthcare. The transformed data is stored in MinIO object storage at each hospital location. This architecture allows analytical queries to run locally at individual hospitals, with only deidentified data being shared while raw patient records never leave their source institution. The approach balances the need for collaborative medical research with the requirement that hospitals retain full control over their patient information.

TECHNICAL EXPERTISE

Backend and Systems

Experience with Golang for building API services and concurrent systems. Comfortable working with goroutines and channels for asynchronous operations. Also experienced with Node.js/Express for building RESTful APIs, implementing authentication flows (JWT), and developing server-side applications. Built webhoo ...

Web Development & Databases

Next.js and React for building web interfaces with server-side rendering capabilities. TypeScript/JavaScript for application development. PostgreSQL experience includes working with relational data, writing SQL queries, and using ORMs like Prisma, GORM for schema management and migrations. Designed database s ...

Develpoment Tools

Proficient with Git for version control and collaborative development. Docker for containerization and consistent deployment environments. Experience with API design and integration, WebSockets for bidirectional communication, and standard debugging and testing practices. Comfortable working in Linux environm ...

Jaweria Manahil

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PROFESSIONAL PROFILE

Final-year Software Engineering student at NUST with primary expertise in **Frontend Web Development**, focused on building responsive, user-friendly interfaces using **React.js and Next.js**. Actively developing backend skills through real-world project work involving **REST APIs, authentication flows, and database schema coordination**. Also trained as a **Software Quality Assurance Engineer**, with hands-on experience in manual testing, test case design, and defect tracking using industry-standard tools. Seeking graduate-level roles where frontend quality, system reliability, and collaborative development are valued.

EDUCATION

Bachelor of Software Engineering

SEECS , Islamabad , 2.8 (2026)

INTERNSHIP EXPERIENCE

We Talk Startups

23-Jun-2025 - 30-Aug-2025

Contributed to Frontend feature development and assisted with Backend integration tasks for a startup-support web platform Participated in bug fixing, debugging, and code reviews to improve application stability and usability Collaborated with the team through daily stand-up meetings and weekly sprint planning sessions, following agile workflows Worked in a fast-paced startup environment, gaining exposure to real-world development cycles and team collaboration

National Center for Artificial Intelligence (NCAI), NUST

01-Jun-2023 - 31-Aug-2023

Developed and maintained frontend components using HTML, CSS, and JavaScript Improved UI structure and basic client-side interactivity Used Git and GitHub for version control and collaboration Gained exposure to professional development workflows in a research environment

Evosoft

01-Jun-2024 - 31-Jul-2024

Worked on frontend and backend development tasks using MERN stack. Assisted in implementing UI components and backend logic Collaborated on shared codebases using Git

10Pearls, Islamabad

01-Mar-2025 - 31-May-2025

Conducted Functional, Regression, Smoke, and Negative testing on a web-based platform Designed test cases based on requirements and user stories Logged and tracked defects using Jira Managed test cases and execution cycles in TestRail Performed API testing using Postman Collaborated with developers and managed test artifacts using GitHub

FINAL YEAR PROJECT

HRXpert – Web Application

Developed a web-based recruitment management system to streamline job postings, candidate applications, and interview workflows. Built the core user interface using React.js and Next.js with responsive design via Tailwind CSS. Integrated frontend with backend REST APIs and assisted in database schema design based on application requirements. Implemented JWT-based authentication and role-based access control (Admin, HR, Candidate). Collaborated closely with backend developer during integration, debugging, and feature refinement using Git and agile practices. Tech Stack: React.js, Next.js, Tailwind CSS, Node.js,

Express.js / NestJS, JWT, REST APIs

TECHNICAL EXPERTISE

Frontend Development (Primary Strength)

HTML5, CSS3, JavaScript React.js, Next.js Tailwind CSS Responsive & component-based UI development

Backend Development (Working Knowledge)

Node.js, Express.js / NestJS RESTful API integration JWT-based authentication (role-based access)

Software Quality Assurance

Manual Testing: Functional, Regression, Smoke, Negative Test case design & requirement analysis Defect reporting & retesting
Tools: Jira, TestRail, GitHub, Postman

Muhammad Nabeel

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PROFESSIONAL PROFILE

Detail-oriented AI and Machine Learning engineer with experience developing and deploying data-driven solutions in professional environments. Demonstrated ability to work with modern machine learning models and language-model–based systems to support intelligent features in real-world applications. Strong background in Python, model development, and system integration, with a proven record of collaborating effectively across teams to deliver reliable, scalable, and business-aligned AI solutions.

EDUCATION

Software Engineering

School of Electrical and Computer Sciences SEECS , Islamabad , 3.27 (2026)

INTERNSHIP EXPERIENCE

Machine Vision and Intelligent Systems Lab

10-Jun-2024 - 01-Sep-2024

Developed and optimized computer vision solutions for object detection and text recognition tasks. Worked on training and evaluating deep learning models and integrating them into end-to-end pipelines. Assisted in experimentation, documentation, and performance analysis of AI-based systems.

Machine Vision and Intelligent Systems Lab

15-Sep-2025 - 18-May-2025

Conducted structured literature reviews on the application of language models in scientific domains. Analyzed practical use cases and contributed to research documentation and technical reporting. Assisted in prototyping and evaluating AI-driven workflows for domain-specific analysis Coauthored a researched publication in a q1 journal with an Impact Factor of 12.1

Zaheen Systems

01-Aug-2025 - 31-Oct-2025

Contributed to the development and refinement of AI-driven features for internal and client-facing applications. Assisted in building and integrating data processing and machine learning components into existing systems. Collaborated with cross-functional teams to test, document, and improve system functionality and reliability.

AI Cognai

10-Sep-2025 - 25-Jan-2026

Developed deep learning pipelines for detecting Freezing of Gait using large-scale, real-world datasets sourced from Kaggle, focusing on model performance and reliability. Designed and implemented an AI-powered, full-stack application featuring an intelligent voice-based interviewing agent for real-time applicant assessment. Worked with agent-based AI systems using LangChain, LangGraph, and MCV server to support conversational workflows and system orchestration. From Date: September 2026

JFF Consultants

01-Dec-2025 - 25-Jan-2026

Designed and developed agent-based AI pipelines for enterprise-grade chatbot systems grounded in customer-specific databases. Built and optimized scalable AI-driven conversational systems with a focus on reliability, contextual accuracy, and system integration. Contributed to the development and experimentation of visual-language–based models to support multimodal AI use cases.

FINAL YEAR PROJECT

Hunarmand AI: Culturally-Aware Intelligent Tutoring for Low-Literacy Urdu Speakers

Core Mission The project aims to bridge the educational gap for vocational trainees in Pakistan—specifically auto-electricians—who may have low literacy levels. It moves beyond standard educational tools by offering an adaptive learning environment tailored to the local cultural and linguistic context. Key Features Target Audience: Vocational workers (initially auto-electricians) who require technical training but face language or literacy barriers. Technology Stack: It utilizes a compact, Urdu-specific Small Language Model (SLM) designed to run efficiently while understanding the nuances of the Urdu language. Multimodal Interaction: To support low-literacy users, the system includes text, audio, and visual capabilities, allowing users to interact with the AI in the mode they find most comfortable. Adaptive Assessments: The system does not just deliver content; it uses multimodal tools to assess the trainee's understanding dynamically.

TECHNICAL EXPERTISE

Full-Stack AI Integration & Software Engineering

Beyond model development, I bridge the gap between AI and production by building RESTful APIs (FastAPI, Node.js) and interactive web applications (React, Streamlit) to serve your models to users and do also have extensive experience with MERN applications along with Web-Sockets.

Generative AI & Agentic Workflows

Specialize in the full GenAI lifecycle, including fine-tuning LLMs (Llama, Mistral, GPT-4o) using efficiency techniques like QLoRA and PEFT. I design sophisticated Agentic workflows for autonomous task execution and build high-performance RAG systems utilizing vector databases and re-ranking models.

Applied Machine Learning & MLOps

My expertise covers the end-to-end development pipeline, from data cleaning and exploratory analysis to model optimization using quantization for deployment. I am proficient in implementing MLOps practices with tools like DVC, MLflow and Airflow to manage the machine learning lifecycle effectively.

Ahmed Faizan

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PROFESSIONAL PROFILE

Software Engineer & DevOps Specialist

Results-driven Software Engineering graduate from NUST with a proven track record of building scalable, production-grade systems. Experienced in managing complex infrastructure across Azure, AWS, and on-premises environments. I specialize in Kubernetes orchestration, CI/CD automation, and FinOps, notably reducing cloud expenditures by 80% through strategic resource optimization. With a technical toolkit spanning Go and K8s I bridge the gap between robust backend development and efficient system operations.
I am passionate about introducing simplicity and efficiency into the development lifecycle through Observability and Internal Developer Platforms.

EDUCATION

BE Software Engineering

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

INTERNSHIP EXPERIENCE

Cowlar Design Studio

01-Nov-2024 - 01-Sep-2025

DevOps Engineer • Led Microsoft ISV Success Programme to unlock expanded benefits. Published a retail solution on Azure Marketplace using ARM templates, maintaining engagement with Microsoft Solution Architects. • Implemented observability stack from scratch for both application-level and infrastructure-level monitoring of on-prem bare-metal servers. • Configured on-prem Mac and Linux-based GitLab runners, reducing build times by 50%, improving Flutter and Docker builds reliability. • Deployed a bare- metal Kubernetes cluster using Containerd, Flannel, and MetalLB; automated setup with Ansible playbooks and Helm templating. • Cut Azure billing costs by 80% through FinOps practices, identified unused resources and calculated ROI per dollar invested. • Built
a self-service internal developer platform (IDP) automating multi-environment on-prem deployments via Ansible and Nginx routing abstraction. • Collaborated with stakeholders on DevOps strategy, talent acquisition, and role definition to strengthen team definition.

Synapse Solutions

01-Jun-2023 - 01-Jul-2024

Software Engineer Built: - Admin Portal of healthcare platform for North American client on Upwork. - Backend of Mobile App focused on gig-economy of Hong Kong.

FINAL YEAR PROJECT

Sedata.AI

Observability and security evaluation platform for AI agents, providing real-time insights into agents performance, cost, and secure-governance. • Published a TypeScript SDK on npm registry for instrumenting MCP servers. • Integrated with OpenTelemetry APIs for collecting logs, metrics, and traces across distributed systems. • Implemented ClickHouse-based analytics pipeline to efficiently query and visualize large-scale telemetry data.

TECHNICAL EXPERTISE

Golang

Open source contributions at NVIDIA KAI-Scheduler Project

Kubernetes
Azure Kubernetes Service and Self-Managed

Azure
Published a retail solution on Azure Marketplace using ARM Templates

CI/CD - GitHub Actions and Gitlab
Automated Safe Deployments Practices

Malik Shahzaib Khan

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PROFESSIONAL PROFILE

I'm a software engineer and a machine learning researcher who loves building things that actually work in the real world. I've spent over a year working in full-stack development, specifically focusing on backend systems and DevOps. My professional industry experience includes my work at Markaz Technologies (YC W22), where I worked as a software engineer, and before that, I worked as an individual freelancer. I have also been part of a pre-seed startup where I am working as a software engineer. Alongside my industry work, I had my research paper accepted at the AICCSA 2025 conference, which was a huge milestone for me. I'm now looking for a role where I can keep growing my technical skills while contributing to meaningful projects.

EDUCATION

Bachelor of Engineering in Software Engineering

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.4/4 (2026)

INTERNSHIP EXPERIENCE

Markaz Technologies (YC W22)

25-Aug-2025 - 12-Dec-2025

During my time at Markaz, I worked on using large language models to work on the address problem for their marketplace. I was also responsible for moving some of our backend infrastructure from AWS Lambda to GCP Cloud Run and served the responses by my own setup CDN, which reduced latency by 4 times. I also migrated the assets currently served from Alibaba CDN to our own GCP bucket and served them via Markaz' own CDN. During this migration, I converted the images from JPG format to WebP format, reducing the size and improving the loading time.

Machine Vision & Intelligent Systems Lab

23-Dec-2024 - 20-Apr-2026

I worked as a final-year project researcher here in this lab, where my work involved researching state-of-the-art models for LiDAR, hyperspectral, and RGB data fusion for phenotyping, specifically the traits like biomass. On the hardware side, I designed and 3D-printed custom mounts for sensors and integrated them onto the MikroKopter. I also handle the deployment of these models onto NVIDIA Jetson Orin Nano boards to enable real-time data collection and processing during flight. For the inference, I also worked on creating the full-stack web portal.

Eligient

19-May-2025 - 03-Mar-2026

I am developing a pre-seed stage MVP that automates legal contract generation and contract reviews. My role involves designing the high-level technical architecture and deciding between the tools, ensuring the platform is both scalable and user-friendly. To keep the product competitive, I meet with industry experts and research cutting-edge technologies to integrate features that solve specific legal bottlenecks. The tech stack of this MVP includes Next.js, FastAPI, Gemini API integration, and using Vercel and Render for the deployment.

TUKL-NUST R&D Center

05-Jun-2023 - 08-Jan-2024

I worked at the TUKL-NUST R&D Center, where I focused on using deep learning for medical diagnostics. I trained models on the NMT scalp EEG dataset to successfully classify brain signals as either normal or abnormal. To make this research practical, I built a full-stack application using Vue.js for the frontend and Flask for the backend, supported by a MySQL database.

FINAL YEAR PROJECT

LiDAR-Based Plant Phenotyping for Precision Agriculture

Developing an end-to-end pipeline and web platform for non-destructive plant phenotyping using 3D LiDAR point cloud data. A key part of my research involves testing whether a lightweight, cost-effective 2D LiDAR sensor paired with GPS can achieve results comparable to heavier, more expensive 3D sensors. I conducted these experiments using a MikroKopter drone, for which I designed and 3D-printed custom chassis components to mount the sensors. On the software side, the core of the project is AgriFormer, a deep learning model designed for hierarchical feature learning to accurately predict above-ground biomass, which was accepted and presented at AICCSA 2025. The web portal includes an interactive visualization suite built with a modern stack to render 3D point clouds and provide real-time agricultural insights, moving traditional crop monitoring into a high-throughput, automated environment that will help researchers get a better idea of which seed yields the best output.

TECHNICAL EXPERTISE

Machine Learning & Research

First-author researcher (AICCSA 2025) specializing in deep learning and natural language processing. Expertise in fine-tuning LLMs and building RAG systems with LangChain. Developed AgriFormer for 3D LiDAR analysis and deployed scalable models via FastAPI on GCP/AWS.

Full-Stack & DevOps

1+ years of experience in Next.js, FastAPI, and Django. Worked in cloud migration (AWS to GCP) and infrastructure optimization. Skilled in Docker, CI/CD pipelines, and database management, with a focus on reducing latency via custom CDN layers and containerized deployments.

Ahmad Shahroz Qadri

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PROFESSIONAL PROFILE

Software Engineer and experienced **Shopify Developer** with strong expertise in **e-commerce development, performance optimization, and modern web technologies**. Over **2.5 years of hands-on experience** working with a Shopify agency, delivering fast, scalable, and conversion-optimized online stores. Skilled in **Shopify, MERN stack, and Next.js**, with a strong interest in building high-performance, user-centric web applications.

EDUCATION

Software Engineering

SEECS , Islamabad , 2.93 (2026)

INTERNSHIP EXPERIENCE

SOCOBA

16-Jun-2025 - 11-Aug-2025

Developed and customized Shopify themes Performed store speed optimization, improving PageSpeed and Core Web Vitals Implemented custom Shopify features, sections, and app integrations Handled store setup, product configuration, payments, and shipping settings

FINAL YEAR PROJECT

Emotion detection from micro expressions

A system capable of identifying human emotions by analyzing subtle and brief facial micro-expressions. The project applied computer vision and machine learning techniques to capture and interpret facial muscle movements, enabling accurate emotion classification.

TECHNICAL EXPERTISE

Shopify Expert and Web Development

Proficient in Shopify development, including theme customization, store setup, performance optimization, and custom feature development. Experienced in building modern web applications using the MERN stack (MongoDB, Express.js, React, Node.js) and Next.js. Strong understanding of web performance optimization, ...

Muhammad Ahsan Gill

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PROFESSIONAL PROFILE

A Software Engineering undergrad student at NUST with a background in DevOps engineering. I specialize in automating cloud infrastructure and optimizing CI/CD pipelines across AWS, Azure, and GCP to bridge the gap between development and operations.

EDUCATION

Software Engineering

SEECS , Islamabad , 2.42 (2022)

INTERNSHIP EXPERIENCE

Syslify

18-Nov-2024 - 31-Dec-2025

Automated cloud resource provisioning using Terraform and Pulumi to maintain scalable infrastructure. Streamlined deployment workflows by managing CI/CD pipelines via GitLab and AWS CodePipeline. Architected a monitoring solution integrating Azure Event Hubs with Coralogix for real-time observability. Authored Azure Runbooks and Python/Bash scripts to automate routine database maintenance and operational tasks.

FINAL YEAR PROJECT

InfraSense: Cloud Infrastructure Optimizer

Designing an automated tool to optimize cloud resource allocation and reduce operational overhead. Focusing on identifying underutilized resources to improve cost-efficiency across cloud environments.

TECHNICAL EXPERTISE

Cloud

AWS, GCP, Azure

Infrastructure

Kubernetes (GKE, AKS), Docker, Terraform, Pulumi

Automation

GitHub Actions, GitLab CI/CD, AWS CodePipeline

Development

Python, Bash, JavaScript, TypeScript, SQL

Hafiz Badar Ur Zaman

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PROFESSIONAL PROFILE

Software engineer with strong full-stack development expertise and a solid research background in machine learning and deep reinforcement learning (DRL). Proficient in the MERN stack and backend engineering, with hands-on experience designing and developing API-driven systems, RESTful services, JWT and OAuth 2.0–based authentication, role-based access control, and third- party integrations. Completed production-focused internships at both US-based and local companies, gaining exposure to on-site, hybrid, and remote environments while contributing to CRM systems, automation workflows, and cloud-based services using React, Node.js, Express, MongoDB, Flask, and Django.

Possesses over eight months of research experience in machine learning and DRL, covering problem formulation, model design, experimentation, and analytical evaluation. Actively involved in academic research, including drafting, reviewing, and contributing to a research publication. Strong foundation in neural networks, optimization techniques, and applied machine learning, with the ability to translate theoretical research into practical, deployable systems.

EDUCATION

Software Engineering

School of Electrical Engineering & Computer Science , Islamabad , 3.07/4.00 (2026)

INTERNSHIP EXPERIENCE

Arrivy

10-Jun-2024 - 25-Aug-2024

During my internship at Arrivy, I directly contributed to live projects that streamlined the company's operations and enhanced client communication: Practical Projects: 1. WhatsApp Integration: Facilitated client communication through WhatsApp by integrating Twilio with Flask. 2. Pipedrive & Monday.com Integration: Developed a key integration for the sales department using Node.js, cloud functions, webhooks, and API documentation from Pipedrive and Monday.com. 3. Email Extension: Created an extension to automate copying emails on Gmail and updating items on Monday.com, significantly improving workflow efficiency. Learning Session: The first four weeks were dedicated to mastering essential web development concepts, including HTTP methods, status codes, URL structures, CORS, authentication mechanisms (JWT, OAuth, OAuth 2.0), REST, GraphQL, Docker, and cloud functions. I applied these skills by developing: 1. A Car Management System using Flask 2. A Note-Taking App in Django 3. OAuth2 Server and Provider implementations for both projects

Proto IT Consultants

23-Sep-2024 - 17-Jan-2025

Working part-time (5 hours daily) as an Integration and Automation Specialist, focusing on optimizing business workflows and automating processes. Zapier & Make.com Proficiency: Expertly designing and refining complex workflows using Zapier and Make.com, streamlining operations across multiple platforms. Improved overall workflow efficiency by automating key business tasks, reducing manual efforts by over 50%. HTTP Knowledge: Applied a deep understanding of HTTP request methods (GET, POST, PUT, DELETE) to manage data exchange between platforms efficiently. Programming Skills: Utilized JavaScript and Python for custom API integration and automations, creating tailored solutions for specific business needs. Improved task processing speed and reliability through optimized API handling. Key Accomplishment: Designed an end-to-end automation system that enhanced the productivity of cross-functional teams by reducing the time spent on manual tasks by 30%.

Integry

03-Feb-2025 - 02-May-2025

As an API Integration Specialist at Integry, I work on enabling seamless integrations for customers by simplifying API interactions. My key responsibilities include: Providing customers with ready-to-use cURL commands that, when executed in tools like Postman, send

API requests to Integry, which then communicates with various platforms. Developing user-friendly UI components that allow users to fill out necessary fields and submit API calls, which are then processed through Integry's integration platform. Working with a diverse ecosystem of 100+ CRM systems, ensuring smooth interoperability and efficient API-driven workflows. Analyzing API documentation, generating functions for integrations, and ensuring proper testing for accuracy and reliability. Creating clear, user-friendly documentation to assist developers in implementing integrations seamlessly. By leveraging AI tools and automation, I contribute to optimizing API-based workflows, enhancing integration efficiency, and improving user experience.

Information Processing & Transmission Lab

31-Mar-2025 - 22-May-2026

Studying recent research on DRL and Stacked Intelligent Meta-Surfaces (SIM) for 6G networks. Advancing knowledge in Reinforcement Learning from MDP to advanced DRL algorithms(Like DQN, DDPG, SAC, PPO). Applied PyTorch NumPy, and Matplotlib to implement DRL algorithms in discrete and continuous action spaces. Develop and test DRL agents in custom environments for wireless communication optimization.

Tensorark

15-Dec-2025 - 22-May-2026

I build production-ready fullstack AI products that combine modern web stacks with - and conversational AI systems. My work spans backend + AI orchestration, focusing on scalable architectures, secure APIs, real-time voice/call experiences, and reliable deployment. What I do: • Develop fullstack AI solutions using MERN (MongoDB, Express, React, Node.js) with for seamless LLM integration, memory, tools, and agent workflows • Build high-performance APIs with FastAPI for efficient model interactions, agent services, and data pipelines • Create intelligent agents powered by advanced LLMs with strong prompt design, tool calling, and context management • Design and ship tools (text + voice) for dynamic, context-aware responses, integrating STT/TTS, telephony/SIP, and real-time streaming • Optimize and fine-tune LLM-driven systems for performance, scalability, and production reliability (logging/monitoring, error handling, DevOps workflows)

FINAL YEAR PROJECT

DRL-based Intelligent Control of SIM-Assisted 6G Wireless Networks (Advisor: Dr. Syed Ali Hassan)

Studying recent research on DRL and Stacked Intelligent Meta-Surfaces (SIM) for 6G networks. Advancing knowledge in Reinforcement Learning from MDP to advanced DRL algorithms(Like DQN, DDPG, SAC, PPO). Applied PyTorch NumPy, and Matplotlib to implement DRL algorithms in discrete and continuous action spaces. Develop and test DRL agents in custom environments for wireless communication optimization.

TECHNICAL EXPERTISE

Languages

Python, C++, JavaScript, Node

Databases

MySQL, MongoDB, SQLite, PostgreSQL

Frameworks

React, Flask, Express, Numpy, PyTorch, FastAPI

Tools

Git, Docker, Google Cloud Functions/Storage, Google Colab

Abdul Rehman Shahid

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PROFESSIONAL PROFILE

Hey , I'm Abdul Rehman Shahid, a self-taught Front-End Developer based in Lahore, Pakistan. I'm passionate about crafting clean, responsive, and scalable web and mobile applications.

I've been actively developing real-world projects, both independently and professionally. Currently, I work at Oryns Solutions where I build modern, performant UIs using React, Next.js, and React Native.

Outside of work, I've created full-stack applications like a MERN-based e-commerce platform and a fintech mobile app clone. I focus heavily on usability, maintainability, and design consistency, whether it's a browser game built with vanilla JavaScript or a cross-platform app like Unify.

Portoflio Website: porfolio-website.vercel

EDUCATION

SOftware Engineering

SEECS , Lahore , 2.67 (2022)

INTERNSHIP EXPERIENCE

MachViz

20-Jun-2024 - 20-Aug-2024

Cancer cell segmentation using YOLOv8

Oryns Solutions (Job)

11-Sep-2025 - 26-Dec-2025

DeliveryOS: Developed for a food-delivery–style platform comprising three apps (Sender, Rider, Receiver), enabling parcel booking, real-time rider matching, and live order tracking. Unify: Developed a mobile-first collaboration platform focused on streamlined interaction between students and mentors.

FINAL YEAR PROJECT

Artificial Intelligence based End Point Detection and Response system

The Hybrid EDR system is a defensive cybersecurity solution designed to monitor Windows endpoints for malicious behaviour and respond automatically to detected threats. Each endpoint runs an administrator-level EDR agent responsible for deep system visibility. The agents continuously monitor system behavior and forward security telemetry to a centralized backend server, where data is stored, analyzed, and used for both real-time response and historical anomaly detection.

TECHNICAL EXPERTISE

Front-End Engineer

Languages: JavaScript, TypeScript, Java, Python, C/C++, HTML/CSS, SQL, JSON Frameworks: React, React Native, Node.js, Express, Expo, Tailwind CSS, Redux Toolkit, Next.js Developer Tools: Git, GitHub, VS Code, Postman, Figma Databases: MongoDB, SQL Others: REST APIs, JWT Auth, Responsive Design, Agile Deve ...

Hasnain Ali

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PROFESSIONAL PROFILE

Machine Learning Engineer with hands-on experience building, fine-tuning, and deploying machine learning models, including modern large language models (LLMs). Strong foundation in Python, core machine learning algorithms, and NLP, with practical experience implementing automated data preprocessing, training, and inference pipelines. Worked on model evaluation, prompt optimization, and LLM fine-tuning for task-specific use cases, with exposure to deploying models through APIs and cloud-based environments.

EDUCATION

Software Engineering

School of Electrical Engineering and Computer Sciences , Islamabad , 2.75 (2026)

INTERNSHIP EXPERIENCE

Optical Network and Technologies Labs

16-Jun-2025 - 01-Sep-2025

As an ML Intern at ONT Lab , I worked on OTDR measurement data to estimate Quality of Transmission (QoT) and detect impairments in optical networks. I implemented machine learning(transformers) models, conducted extensive data preprocessing on large optical trace datasets(time series datasets), and applied explainable AI techniques, including SHAP-based feature attribution, to interpret model decisions and identify key physical parameters affecting QoT.

FINAL YEAR PROJECT

Emotion Detection form Micro Expressions

Aimed to enable accurate recognition of genuine human emotions by analyzing facial micro-expressions using a lightweight, production-ready deep learning pipeline. Developed an emotion recognition system that detects facial micro-expressions that are brief, involuntary cues often missed by traditional models. Implemented a teacher–student architecture using self-supervised learning for motion representation and knowledge distillation to train a lightweight, deployment-ready model.

Secure Encrypted Decision Tree Inference System

Built a client–server system using fully homomorphic encryption for decision tree inference to enable privacy-preserving classification where the server never sees client plaintext data

Smart Consent Form Desk Assistant

Built an LLM-powered extraction pipeline using Llama-3.1-8b-instant Model hosted by Groq and prompt-engineered JSON schemas to automatically structure key clinical and consent fields from unstructured healthcare documents

TECHNICAL EXPERTISE

Large Language Models

Fine Tuning LLMs (LoRA, PEFT), Prompt Engineering, Embedding Generation, Semantic Search, Vector Databases (FAISS, Chroma), RAG, Text Classification, Information Extraction, Sequence-to-Sequence Modeling, Generative AI, Open-Source LLMs (LLaMA, Mistral, Phi)

Programming and Software Foundations

Python, PyTorch, TensorFlow, NumPy, Pandas, Scikit-learn, OOP, DSA, SQL, NoSQL, Database Management,, Version Control

(Git, GitHub), Shell Scripting Basics, API Integration, Software Development Best Practices

Deep Learning

CNNs,RNNs, LSTM, Transformer Architectures, Attention Mechanisms, Transfer Learning, Fine-Tuning, ResNet, EfficientNet, MobileNet, Data Augmentation, Handling Imbalanced Datasets, Model Evaluation, Hyperparameter Tuning, Real-Time Inference

MLOps

Model Deployment, FASTAPIs, Docker & Containerization

Automation

Workflow Automation, n8n, Low-Code Automation, Event-Driven Pipelines

Computer Vision

Image Classification, Object Detection, Facial Analysis, Emotion Recognition, Video Analysis, Pretrained Vision Models (ResNet, EfficientNet, MobileNet), Data Augmentation for Images, Image Preprocessing, Semantic Segmentation, Instance Segmentation, CNN-Based Feature Extraction, Transfer Learning

RAG

Vector Databases (FAISS, Chroma, Pinecone), Embedding Generation, Semantic Search, Document Chunking & Indexing, Query Rewriting, Reranking, Embedding-Based Retrieval, Contextual Information Retrieval

Hafiz Muhammad Ammar

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PROFESSIONAL PROFILE

Machine Learning Engineer with hands-on experience in building, training, and deploying data-driven and AI-powered systems. Strong expertise in reinforcement learning, deep learning, and classical machine learning using PyTorch, Scikit-learn, and Gymnasium. Experienced in developing production-ready APIs with FastAPI, managing experiments and data versioning with MLflow and DVC, and containerizing applications using Docker. Proficient in data analysis and visualization with Pandas, NumPy, and Matplotlib, and in computer vision using OpenCV. Actively working with LLM orchestration frameworks such as LangChain and LangGraph, and vector databases like ChromaDB to build scalable AI and RAG-based solutions.

EDUCATION

Bachelors of Engineering in Software Engineering

School of Electrical Engineering and Computer Sciences , Islamabad , 3.18 (2026)

INTERNSHIP EXPERIENCE

TRUST NEXUS

14-Jul-2025 - 12-Sep-2025

Developed a modular AI system powering the NEXI Humanoid Robot — integrating components from Computer Vision, Speech, NLP, Learning, and more.

MACHVIS

03-Jun-2024 - 30-Aug-2024

Worked on Machine Learning and Computer Vision related projects.

FINAL YEAR PROJECT

Troubleshooting Agent

This agent performs intelligent troubleshooting for Linux PCs using a multi-phase agentic workflow, orchestrated by LangGraph and powered by local LLMs. It leverages Fluentd for log collection and LangChain for command execution.

TECHNICAL EXPERTISE

MLOPs Engineer

I can build and deploy ML/DL applications as well as specialized in RL.

Ayesha Siddiqa

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PROFESSIONAL PROFILE

I am a motivated Software Engineering undergraduate at NUST (CGPA 3.88) with a strong interest in **machine learning** and real-world problem solving. i have hands-on research experience in **remote sensing, satellite imagery analysis, and transformer- based models**, including work on land-use change detection, deforestation monitoring, and vision-language models. Comfortable working across the full ML pipeline data collection, preprocessing, model training, evaluation, and deployment using Python and modern ML frameworks.

I have been recognized for consistent academic excellence and leadership, with the ability to translate theoretical concepts into reliable, well-engineered systems. Actively seeking roles where strong fundamentals in software engineering and applied machine learning can be used to solve complex, real-world problems.

EDUCATION

Bachelor of Software Engineering

SEECS , Islamabad , 3.88 (2026)

INTERNSHIP EXPERIENCE

Machine Vision and Intelligent Systems Lab, SEECS, NUST

11-Jun-2025 - 31-Aug-2025

Conducted research on remote sensing and satellite image analysis to monitor deforestation and urban expansion. Created custom bi-temporal datasets using Google Earth Engine for 20 global regions to track urban expansion and land use changes.Trained and optimized machine learning models and transformer architectures (e.g., BIT, ScratchFormer) for land cover change detection

Machine Vision and Intelligent Systems Lab, SEECS, NUST

01-Sep-2024 - 01-Aug-2025

Working on generating detailed textual descriptions of satellite imagery using pre-trained Vision-Language Models (VLMs).In parallel, worked with point cloud data to analyze spatial structure and elevation-based features, supporting tasks such as urban expansion analysis and scene understanding. This work emphasizes multimodal learning, geospatial data pipelines, and the practical challenges of aligning visual, spatial, and textual representations for real-world remote sensing applications.

FINAL YEAR PROJECT

Gaze-Guided Explainable AI for EEG Brain Disorder Classification

This project is a human-aligned AI framework that integrates neurologist eye-tracking data with EEG signals to make deep learning based clinical decisions transparent, verifiable, and clinically meaningful. The project captures where experts visually focus during EEG interpretation and synchronizes this gaze information with EEG epochs to create multimodal datasets combining electrophysiology, attention maps, and diagnostic labels. By training models to align their internal attention and explanations with expert gaze patterns, the system addresses key limitations of black-box EEG classifiers , lowering cognitive load and enabling clinicians to validate whether predictions are based on medically relevant waveform features rather than spurious correlations. The outcome is an interpretable, trust-worthy AI system that bridges human expertise and machine intelligence, accelerating EEG analysis while preserving clinical rigor and accountability.

TECHNICAL EXPERTISE

Machine Learning

Designs, trains, and evaluates classical ML models for classification, regression, and recommendation tasks. Strong grounding in feature engineering, model selection, evaluation metrics, and real-world data handling.

Deep Learning

Experience with TensorFlow, model optimization, overfitting control and CNNs, Transformers, and hybrid architectures for vision and sequence task

Web Development

Built full-stack web applications using HTML, CSS, JavaScript, PHP, Laravel, and MERN

Research & Experimental Design

Experienced in dataset construction, benchmarking models, and reporting quantitative results.

Programming

Python, C/C++, Java, SQL

Muhammad Saad Ashraf

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PROFESSIONAL PROFILE

Enthusiastic Software Engineering student focused on solving complex problems, developing scalable systems, and exploring innovative areas of Computer Science research.

EDUCATION

Bachelor of Engineering in Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.41 (2026)

INTERNSHIP EXPERIENCE

Bazaar Technologies

16-Jun-2025 - 11-Aug-2025

Changed the card refund process to an instant wallet-first approach. Instead of forwarding the refund request for a cancelled card order to the bank, we first load the money in the customer's wallet as a result of this feature. Then if the customer wants, we let them request a bank refund. This resulted in increased retention and repeat orders while also enhancing customer experience due to instant refunds as the bank usually takes 12-14 business days to process the refund. Integrated the Jazzcash mobile payment webhook-based system into the Bazaar infrastructure, resulting in an 11% increase in digitally paid orders.

Bazaar Technologies

11-Aug-2025 - 26-Jan-2026

Was promoted to Trainee Engineer after the internship. Since then, I have worked on integrating Cybersource (one of the world's biggest card payment providers) into the Bazaar infrastructure through HBL. Currently working on building and enhancing systems for after-sales reporting and compliance.

FINAL YEAR PROJECT

Adaptive Web Interaction: Leveraging Reinforcement Learning for Comprehensive Action Support

Training small language model agents for the task of web navigation using reinforcement learning techniques so that users can give the agent a natural language task to perform on a given website and see it complete it on their browsers through a browser extension.

TECHNICAL EXPERTISE

Backend Development

Proficient in backend system design, creating scalable APIs and writing clean, maintainable backend code. Worked with backend frameworks like Node and Express, Django, and Springboot.

Machine Learning

Have 200+ research hours in Machine Learning and Artificial Intelligence under my belt. Worked as a Deep Learning Research Intern at TUKL Deep Learning Lab where I worked on developing an end-to-end EEG diagnostic system with natural language report generation. Currently working on a research-based final year ...

Aima Sibtain

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PROFESSIONAL PROFILE

AI and Quality Testing professional with experience in machine learning, medical imaging, and AI-powered applications. Skilled in Python, PyTorch, TensorFlow, and GPT-based systems, with a track record of building accurate models and ensuring reliable, user-friendly AI solutions across healthcare and creative apps.

EDUCATION

Bachelor of Software Engineering

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.39 (2026)

INTERNSHIP EXPERIENCE

NovaTechX

01-Jul-2025 - 31-Aug-2026

At NovaTechX, I collaborated closely with doctors and technical teams to develop an AI-powered prescription system that could communicate in multiple languages. Participated in requirement gathering and designed workflows to improve doctor–patient interactions. Developed a multilingual AI system to assist doctors in generating accurate prescriptions, integrating GPT-based NLP models, speech-to-text, and translation technologies. Helped improve clinical workflow efficiency and decision-making with a user-friendly, AI-driven solution.

Murrabi

01-Jul-2024 - 17-Aug-2024

I worked on developing and optimizing AI models for real-world applications, especially in healthcare. Built and fine-tuned deep learning models including Naive Bayes, Decision Trees, and DNNs, applied to object recognition and medical image analysis. Developed a Skin Cancer Detection System using 3D-TBP, achieving 88% accuracy initially, which improved to 92% with further optimization. Gained expertise in data preprocessing, pattern detection, and image classification using Python, PyTorch, TensorFlow, and OpenCV. Focused on improving model performance, accuracy, and reliability, preparing me to solve complex AI challenges.

Code Knitters

12-Jan-2026 - 25-Jan-2026

At Code Knitters, I am ensuring the smooth functioning of Imagine AI for video generation and image animation. Conducted manual and functional testing, wrote and executed test cases, and validated end-to-end workflows. Performed regression testing and collaborated with developers to resolve bugs efficiently, improving overall stability. Overall, enhancing the user experience and reliability of AI-powered app features. Also working on testing of eshaafi, which is an online system.

FINAL YEAR PROJECT

Smart Assessment and Marking System

The Smart Assessment Marking System is an end-to-end platform designed to automate the entire assessment process for HEC-associated universities, from creation to marking and analytics. It allows faculty to build dynamic question banks aligned with Course Learning Outcomes (CLOs), supporting various formats such as MCQs, descriptive answers, assignments, and programming tasks, with options for randomized papers to ensure academic integrity. The system automates grading where possible, using instant scoring for objective questions and AI-assisted evaluation for descriptive answers, while allowing teachers to review and adjust marks. Beyond individual assessments, it provides comprehensive analytics at both student and semester levels, mapping performance to CLOs and Program Learning Outcomes (PLOs) to generate insights on curriculum effectiveness and student learning trends. The platform ensures HEC compliance by generating ready-to-submit reports and dashboards for faculty, department heads,

and university administration. With secure, role-based access, integration with existing LMS systems, and multi-format report export, the system saves faculty time, standardizes evaluation, and delivers data-driven insights that help universities monitor learning outcomes and improve academic programs.

TECHNICAL EXPERTISE

Artificial Intelligence & Machine Learning

Designed and implemented AI-powered systems across domains. For example, the Smart Assessment Marking System leverages NLP and transformer-based models to grade short-answer questions against predefined rubrics, and the Skin Cancer Detection project used deep learning to achieve finalist-level accuracy in the ...

Quality Testing

For eshaafi, I performed manual and functional testing across all features, ensuring smooth operation, reliability, and an optimal user experience. For Rural Rise, I conducted extensive testing including unit, integration, and regression testing. Additionally, I performed penetration testing using OWASP ZAP a ...

Natural Language Processing

Developed semantic similarity algorithms and transformer-based models for educational assessment systems. Built search engines analyzing over 140,000 pages using NELA-GT datasets, focusing on ranking algorithms and source credibility analysis.

Data Engineering and Analytics

Built ETL pipelines to collect, clean, and structure large datasets (medical images, student assessments, market data) downstream for analytics and machine learning. Designed data preprocessing workflows using Python (Pandas, NumPy) normalization, feature extraction, and consistency validation. Worked wit ...

Abdul Munim Adil

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PROFESSIONAL PROFILE

Mid-level Full-Stack Software Engineer with 2+ years of experience building and scaling product-focused web applications in remote, fast-paced startup environments. Currently contributing to a product-based SaaS platform, delivering end-to-end features across frontend and backend with a strong emphasis on performance, SEO, and scalability. Experienced with React, Next.js, Node.js, ASP.NET, and AWS, including SSR integrations, billing workflows, spam-prevention systems, and large-scale feature development. Previously a Top-Rated Upwork freelancer with 100% client satisfaction, recognized for strong ownership, clean architecture, and the ability to ship reliable, user-centered solutions from concept to production.

EDUCATION

BACHELOR OF SOFTWARE ENGINEERING

National University of Sciences & Technology (NUST) , Islamabad , 3.09 (2026)

INTERNSHIP EXPERIENCE

Full-Stack Web Developer @ Magical Digits

01-Nov-2021 - 31-Oct-2022

Lead Back-end developer in migrating classic ASP site to ASP.Net/Next.js to manage scale of thousands of bookings/visitors, avoiding double booking from channels such as airbnb, booking.com Worked on MERN stack to add features to an existing optical solution for shopkeepers, Sold to over 50 customers in Pakistan. Primary responsibility as a Full-Stack Engineer, which includes building, shipping, and maintaining a feature-rich software project. Utilizing Github actions, AWS or digital ocean to deploy application following CI/CD solution or static egress IPs for other services.

TopRatedFreelancer | Upwork

01-Nov-2022 - 01-May-2025

100% Client satisfaction Primary role as a Full-Stack Engineer utilizing knowledge of front-end and back-end technologies to build APIs, integrating into front-end technologies such as Next.js, React.js Working with projects from other developers has proven to be a valuable cross-domain experience. Handled projects from the ground up, choosing architecture, database solutions , ability to work independently and self-guided

Software Engineer L1 @ iClosed

01-Aug-2025 - 15-Feb-2026

Full-stack Web Developer working across feature development, performance optimization, and AWS-based SSR integration. Contributed to the Unified Inbox, iScore billing, scalable spam-prevention systems, and SEO/meta enhancements for event scheduling pages. Key contributions: Developed and shipped the Unified Inbox feature Built iScore billing workflows and supporting backend architecture Added SEO and social preview meta-tags with AWS-powered SSR for React pages Implemented large-scale spam reduction using browser fingerprinting Converted Figma UI designs into production components end-to-end At iClosed, I work as a full-stack developer building production features across both frontend and backend systems. I developed core modules including the Unified Inbox and iScore billing platform, and implemented SEO/meta tagging with AWS-based server-side rendering to enable accurate social preview for event-scheduling pages. I also introduced a scalable fingerprinting approach to mitigate automated spam and reduce abuse across our platform, helping retain a key customer. My role includes converting Figma designs into fully functional features within a React environment, collaborating closely with design and product teams to deliver reliable, user-focused solutions.

FINAL YEAR PROJECT

A Multimodal AI-Driven Platform for Short-Term Rental and Real Estate Investment Analytics

This Final Year Project proposes the design and development of a multimodal AI-driven investment analytics platform that integrates data from short-term rental listings (Airbnb) and real-estate portals (Zameen.com). The system employs web scraping to collect dynamic listing data and a multimodal AI engine processing to extract and normalize structured information. Suggesting investors on profitability analysis of zameen.com property in context of Short-term rental market i.e. AirBnb

TECHNICAL EXPERTISE

Languages

JavaScript (ES6+), TypeScript C#, SQL

Frontend

React.js, Next.js (SSR, SEO optimization) HTML5, CSS3, Tailwind CSS Figma → production UI implementation

Backend

Node.js, Express.js ASP.NET / ASP.NET Core RESTful APIs, Authentication & Authorization

Databases

PostgreSQL, MySQL MongoDB Database schema design & optimization

Cloud & DevOps

AWS (EC2, S3, CloudFront, IAM) CI/CD with GitHub Actions Docker (basic containerization) DigitalOcean

Architecture & Systems

Server-Side Rendering (SSR) Scalable API design Billing & payment workflows Spam prevention & abuse mitigation Performance optimization

Tools & Practices

Git, GitHub Agile / Scrum Code reviews, debugging, monitoring Unit & integration testing (basic)

Eman Muhammad

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PROFESSIONAL PROFILE

Motivated Web Developer with a strong foundation in front-end and back-end development. Experienced in building responsive websites and web applications using modern technologies. Eager to learn, grow, and contribute to impactful development projects.

EDUCATION

B.E Software Engineering

SEECS , Islamabad , 2.67 (4)

INTERNSHIP EXPERIENCE

Virtual Soft Technologies

01-Jul-2025 - 22-Aug-2025

Web development intern involved in developing responsive front-end components using React and Tailwind CSS, integrating secure APIs via Node.js, perfromance optimization, code reviwes, and debugging.

FINAL YEAR PROJECT

OBE-Assess

OBE-Assess integrates AI and NLP models within an OBE-aligned framework to streamline assessment creation, grading and analytics, providing data-driven insights for continuous academic improvement

TECHNICAL EXPERTISE

Web development

Expertise in front-end and back-end web development, including HTML, CSS, JavaScript, and modern frameworks. Skilled in creating responsive layouts, integrating APIs, managing databases, and delivering secure, high-performance web applications.

Amna Ahmed

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PROFESSIONAL PROFILE

Passionate individual eager to explore the limitless potential of AI, I'm constantly seeking opportunities to apply my skills and contribute to innovative projects that push the boundaries of technology.

EDUCATION

Bachelors in Software Engineering

SEECS , islamabad , 3.18 (2022)

INTERNSHIP EXPERIENCE

Machine Vision and Intelligence System Lab, SEECS

01-Aug-2024 - 30-Sep-2024

Led a research project on remote sensing image change detection, leveraging both traditional machine learning and transformer- based models. Preprocessed and analyzed large-scale satellite imagery datasets, improving detection accuracy for environmental monitoring.

PARCO-Pak Arab Refinery Ignite Summer Internship

01-Jul-2025 - 30-Sep-2025

Worked on PARCO AI Hub Contributed to IT digitalization projects and explored SAP ERP modules. Studied predictive analytics applications for refinery operations

WebbsAI

01-Oct-2025 - 01-Dec-2025

Designed and categorized UI-focused LLM evaluation tasks covering UI generation, understanding, modification, and testing

FINAL YEAR PROJECT

Gaze-Guided Explainable AI for EEG-Based Brain Disorder Classification

Designed a multimodal AI framework that integrates clinician eye-tracking data with EEG signals to improve diagnostic accuracy and model transparency. Developed a gaze-based EEG annotation tool to capture expert visual attention in real time and align it with neural signal classification. Trained gaze-guided deep learning models to highlight clinically relevant EEG regions, enabling explainable predictions and reducing expert labeling effort. The system addresses neurologist scarcity by bridging human expertise with AI-driven, interpretable decision support for brain disorder diagnosis.

TECHNICAL EXPERTISE

Engineering & Simulation

AutoCAD, Cisco Packet Tracer, WireShark, ModelSim, Proteus, MATLAB

Geospatial & Remote Sensing

ArcGIS, Google Earth Engine, Google Earth Pro

Programming & Development

Python, MATLAB, SQL, C, Java, C++, C#, JavaScript, HTML, CSS

Machine Learning & AI
TensorFlow, OpenCV, Scikit-learn, Pandas, NumPy

Design & Productivity
Figma, Canva, Microsoft Word, Excel, PowerPoint

Navaal Iqbal

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PROFESSIONAL PROFILE

AI Engineer and Software Engineering student with research experience in data-intensive machine learning systems across remote sensing and medical AI domains. Experienced in managing large-scale multi modal datasets, preprocessing and aligning heterogenous data for deep learning pipelines. Interested in advancing my expertise in data engineering and business intelligence through practical and research-driven knowledge.

EDUCATION

Bachelors in Software Engineering

SEECS , Islamabad , 3.54 (2026)

INTERNSHIP EXPERIENCE

Benchmtarix

03-Sep-2025 - 25-Jan-2026

• Develop AI pipelines and REST APIs using FastAPI to automate processing of large-scale financial documents, including PDF ingestion and layout-aware data extraction. • Conduct systematic evaluations of OCRs and vision-language models (VLMs), including local on-prem deployments, to compare accuracy, efficiency, and computational overhead. • Optimize AI workflows for reduced memory and CPU usage on the main server.

Foretheta LLC

20-Jan-2025 - 20-Apr-2025

• Worked on vector semantic search and keyword similarity search using Google's SERP API to enhance patent search relevance. • Worked with vector representations and similarity search using FAISS library for scalable semantic indexing. • Contributed to the frontend of PatentScan (Foretheta's product) using Vercel, integrated backend APIs, and implemented authentication with Clerk.

Machine Vison and Intelligent Systems Lab (Machvis)

15-Sep-2024 - 15-Jan-2026

• Built a dataset pipeline linking 3D city-scale point clouds to human-annotated textual descriptions for aerial position localization. • Georeferenced SensatUrban point clouds using manually selected ground control points and geometric transformation functions. • Curated position-query pairs to create a spatial-semantic bridge for training and evaluating language-assisted localization models.

FINAL YEAR PROJECT

Gaze Guided Explainable AI for Brain Disorder Analysis in EEG

Built a gaze based labelling tool using PyQt5 to capture neurologist's gaze on EEGs using Tobii Spark eye tracker. Used the gaze data to capture fixations for visualizing heatmaps. Trained CNN and transformer based models for capturing spatially and temporally important regions in an EEG. Integrating gaze into models to explicitly align the model's predictions with doctors' diagnoses.

TECHNICAL EXPERTISE

Languages & Frameworks

Python, C++, PyTorch, Langchain, Langgraph, NumPy, Pandas, OpenCV

Domain Knowledge

Machine Learning, Deep Learning, Computer Vision, NLP, Generative AI

Ali Amar

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PROFESSIONAL PROFILE

I am a research-driven Software Engineering undergraduate at NUST, specializing in **Artificial Intelligence** and **Autonomous Systems**. Uniquely for a fresh graduate, I have **three research papers under review** at prestigious venues (including *Springer Nature* and *IEEE*), covering **Deep Learning** and **Agentic Workflows**.

My technical background blends academic rigor with industry hustle. I have over a year of experience as a **Freelance Full-Stack Developer** and **Game Programmer**, delivering production-grade applications. I am now focused on building intelligent DevOps tools that bridge the gap between experimental AI and reliable infrastructure.

EDUCATION

BE Software Engineering

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.06 (2026)

INTERNSHIP EXPERIENCE

M-Labs

07-Jun-2024 - 13-Aug-2024

Gained hands-on experience in mobile game architecture during an internship at M-Labs, utilizing Unity and C# to engineer immersive experiences. I played a key role in developing a full-featured cricket game for Android, where I implemented complex gameplay logic, physics, and optimized mobile performance.

Freelance Full-Stack Development

09-Jun-2025 - 24-Jan-2026

Developed and maintained responsive web applications using the MERN Stack (React, Node.js). Successfully delivered client projects, focusing on user-centric design and data analysis integration.

FINAL YEAR PROJECT

Callisto AI: Conversational Intelligent CI/CD Automation tool

Callisto AI is an open-source, conversational CI/CD automation platform that fundamentally transforms deployment workflows from complex, imperative YAML configurations to intuitive natural language interactions and autonomous orchestration. The system aims to reduce deployment complexity, eliminate manual YAML configuration, and enable intelligent pipelines using advanced AI technologies.

TECHNICAL EXPERTISE

Artificial Intelligence & Agentic Workflows

Specialized in building autonomous software agents using LLMs. Proficient with frameworks like LangChain and LlamaIndex for RAG applications.

DevOps & Infrastructure Automation

Skilled in modern CI/CD orchestration and containerization with experience on designing automated deployment pipelines and researching intelligent methods to replace imperative configuration with autonomous workflows.

Full-Stack Web Development (MERN)

Advanced proficiency in the MERN Stack. Delivering responsive, user-centric web applications for freelance clients, specialized in frontend development and UI designing.

Research & Technical Writing

Demonstrated ability to author high-impact technical papers. Experience in conducting reviews (Systematic, Bibliometric and Literature) and documenting complex software architectures. Currently authored three papers (under review) submitted to Springer Nature, IEEE proceedings, and ICCoR.

Sara Adnan Ghori

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PROFESSIONAL PROFILE

I am 8th semester Software Engineering student passionate about building impactful AI-driven solutions. With hands-on experience in machine learning, LLM-based applications, and web development, I've developed projects from concept to deployment. My involvement in university organizations has also strengthened my leadership, collaboration, and communication skills, enabling me to deliver technology that aligns with real-world user needs.

EDUCATION

BE Software Engineering

School of electrical engineering and computer science , Islamabad , 3.49 (2026)

INTERNSHIP EXPERIENCE

Planetive

24-Jun-2025 - 29-Aug-2025

During my internship, I worked on a web development project, focusing mainly on the frontend using React. My responsibilities included developing key features for the application, integrating it with a Supabase database, and preparing essential project documentation such as the Scope, SRS, and User Manuals to support the system's implementation.

MachVis Lab NUST

03-Jun-2024 - 30-Aug-2024

Built object detection models for autonomous vehicles using YOLOv8, achieving 74.9% accuracy on obstacle detection. Conducted model performance evaluations and comparisons using SAM, supporting data driven decision-making for deployment. Partnered with engineering on optimization and feature delivery timelines.

FINAL YEAR PROJECT

HRXpert : Automating Talent Acquisition using Artificial Intelligence

Designed and developed an AI-powered Applicant Tracking System (ATS) that automates key stages of the recruitment process using Large Language Models (LLMs). The system performs intelligent resume parsing and resume scoring, conducts real-time conversational AI interviews via WebRTC, and provides recruiters with structured analytics and candidate rankings. The platform is built on a scalable, secure microservices architecture, emphasizing low latency, explainable AI outputs, bias mitigation, and efficient end-to-end candidate management.

TECHNICAL EXPERTISE

AI-Powered Resume Analysis & Scoring (LLMs + Python)

Built an end-to-end AI-based resume scoring system using LLMs and Python, applying prompt engineering, skill extraction, and semantic similarity to evaluate candidate–job relevance.

Machine Learning & Deep Learning

Developed and evaluated ML/DL models using PyTorch, including object detection systems with YOLOv8, YOLOv11, Faster R-CNN, and SAM for real-world applications.

LLM Integration & Prompt Engineering

Integrated multiple LLM APIs into applications, designing effective prompts and evaluation metrics to optimize accuracy, latency, and

cost.

Data Processing & Similarity Analysis

Implemented data preprocessing, feature extraction, and vector-based similarity scoring using Python, Pandas, and NumPy.

Full-Stack Development with AI Integration

Built full-stack applications using React, Next, Laravel, Express, MongoDB, and Supabase, integrating AI-driven features into production-ready systems.

Abdul Wahab

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PROFESSIONAL PROFILE

Final-year Software Engineering student with expertise in full-stack development using Next.js, React, Node.js, and MongoDB. Experienced in building web applications with authentication, role-based access, and RESTful APIs. Completed a research internship in Machine Vision Lab, working with LiDAR data and deep learning for plant biomass estimation, resulting in a paper published in **IEEE AICSSA 2025**. Skilled in designing and deploying end-to-end software solutions, with hands-on experience in 3D point cloud processing, remote sensing, and data-driven decision-making.

EDUCATION

Bachelor of Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.21 (2026)

INTERNSHIP EXPERIENCE

Machine Vision & Intelligent Systems Lab

10-Jun-2024 - 25-Jan-2026

Worked on LiDAR-based precision agriculture by converting 2D LiDAR data into 3D point clouds for biomass prediction and spatial analysis. Developed data preprocessing pipelines, handled large-scale spatial datasets, and trained machine learning models to extract actionable agricultural insights. Applied deep learning techniques to predict plant biomass, optimize data representations, and enhance model accuracy. Collaborated with the research team to evaluate model performance and validate results. This work resulted in a paper published in IEEE AICSSA 2025.

FINAL YEAR PROJECT

LiDAR based Plant Phenotyping for Precision Agriculture

Designing a UAV-based 3D point cloud generation approach using 2D LiDAR, focusing on deep learning–based plant biomass estimation. Responsible for collecting and preprocessing LiDAR data, reconstructing 3D point clouds, and developing end-to-end deep learning pipelines for biomass prediction. Performing data analysis, model evaluation, and visualization to extract insights from spatial datasets. Optimizing algorithms for efficiency and precision to develop scalable UAV-based precision agriculture methods.

TECHNICAL EXPERTISE

Full-Stack Development

Next.js, React.js, Tailwind CSS, Bootstrap 5,Node.js, Express.js, MongoDB, REST APIs, Authentication & Authorization (Clerk, JWT, OAuth), CRUD & Role-Based Access, Git, Docker

Computer Vision & 3D Imaging

3D Point Cloud Processing, Transformer-based U-Net Segmentation, Remote Sensing Imagery, LiDAR Data Analysis, Plant Phenotyping, Data Preprocessing & Model Evaluation

Machine Learning & AI

Deep Learning, Transformers, Explainable AI (SHAP/XAI), Biomass Prediction

Muhammad Salman Siddiq

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PROFESSIONAL PROFILE

I'm a Software engineer with hands-on experience building production systems that scale. Over the past year, I've designed and deployed async, high-performance APIs using FastAPI and PostgreSQL, handled OAuth integrations across multiple providers, and built AI-powered automation platforms from architecture to deployment. I work comfortably with Docker, microservices, and CI/CD pipelines, and I've deployed containerized applications on GCP with automated workflows.

My work spans both SQL (PostgreSQL with SQLAlchemy async patterns) and NoSQL databases (MongoDB), and I've optimized systems for performance through query tuning, async processing, and background job orchestration. I thrive in fast-paced environments—writing clean, testable code, debugging complex issues, and shipping reliable software quickly. I'm proficient in Python, comfortable with Linux and bash scripting, and experienced with REST APIs, webhooks, and microservices architecture.

I bring strong problem-solving skills, a collaborative mindset, and a track record of owning projects end-to-end. Whether it's building LLM-powered workflows, integrating third-party APIs, or troubleshooting production issues, I focus on delivering systems that work well and solve real problems.

EDUCATION

Bachelors of Engineering in Software Engineering

SEECS , RAWALPINDI , 3.54 (2026)

INTERNSHIP EXPERIENCE

Antematter

01-Jun-2025 - 01-Oct-2025

• Contributed to building a data analysis co-pilot for hospitality industry by developing and testing parts of an LLM- driven multi-agent system, achieving sub-60s response times for SQL + Python tasks. • Automated testing and evaluation of agent performance using custom scripts, running agentic evaluations to spot failure cases and improve reliability in real-world SQL + Python workloads. • Built a full-stack subtitle scraping tool (FastAPI, Next.js) to extract and process YouTube captions; used threads and worker pools to significantly reduce batch processing time. • Set up n8n automation workflows linking GitHub, Jira, and Discord; streamlined team updates by auto-syncing code pushes with ticket status changes and notifications.

FINAL YEAR PROJECT

Adaptive Web Interaction: Leveraging RL for Comprehensive Action Support

We are building a multi-agent AI system that can navigate websites based on natural language instructions from users. For privacy and computational efficiency, we are fine-tuning open-source small language models (SLMs) using supervised learning and advanced reinforcement learning techniques. As part of this effort, we are also developing automated pipelines to generate a large- scale training dataset using LLMs.

TECHNICAL EXPERTISE

Aimen Munawar

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PROFESSIONAL PROFILE

A versatile and detail-oriented Software Engineer with hands-on experience in project management, full-stack development, and software quality assurance. Successfully led and contributed to multiple real-world projects, overseeing planning, development, and delivery cycles. Skilled in manual and automated testing using tools such as Playwright, Jest, Postman, Eclipse, and Selenium. Proven ability to bridge communication between technical teams and stakeholders, ensuring timely delivery of high-quality software. Passionate about building scalable systems and maintaining software reliability through thorough testing and continuous improvement.

EDUCATION

Bachelor of software engineering

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.41 (2026)

INTERNSHIP EXPERIENCE

Octaloop Technologies

12-May-2025 - 12-Aug-2025

Junior Technical Project Manager Contributed to full-stack development, testing, and management. Integrated Plaid and Stripe; performed extensive manual testing for authentication, analytics, and payments. Supported sprint planning and client communication via Gmail, Workspace, and standups.

Bloomrix

06-Aug-2024 - 06-Nov-2024

Software Engineering Intern Developed and tested responsive web apps, including an e-commerce platform and weather app using JavaScript, React, and Strapi. Performed manual testing on core user flows and validated REST API endpoints with Postman for login, product retrieval, and forms.

DPL

03-Jun-2024 - 14-Jun-2024

Software Engineering Intern Built a multi-tenant file management system integrated with AWS S3. Deployed secure authentication and user profile features. Conducted exhaustive manual testing and evaluated S3 performance for speed, compatibility, and error handling.

FINAL YEAR PROJECT

Cybershield : Cybersecurity Awareness & Incident Reporting Platform

Cybershield is a multilingual platform boosting cybersecurity awareness in Pakistan. It offers interactive learning, phishing simulations, and real-time risk assessment using gamification, role-based dashboards, and AI to educate users and promote digital safety.

TECHNICAL EXPERTISE

Manual Testing

Extensive experience in end-to-end testing of web applications, covering authentication, payment flows, API integrations, and user workflows.

Automated Testing
Proficient with Playwright and Jest for E2E, unit, and integration testing. Experienced with Postman for API testing and validation.

React & Next.js
Experience in building responsive, user-friendly interfaces using React, Tailwind CSS, and state management with Redux Thunk.

Agile & Sprint Planning
Participated in sprint planning, timeline coordination, and milestone tracking in a technical project management role.

Stakeholder Communication
Acted as a bridge between development teams and international clients, ensuring clear communication and timely delivery.

Tool Proficiency
Experienced with Gmail, Google Workspace, Git, and standups for project tracking and team collaboration.

AWS & GCP
Hands-on experience with AWS S3 for file management and GCP for deploying containerized microservices.

Node.js & Express.js
Built secure backend systems with user authentication, profile management, and API development.

Database Management
Experience with MongoDB for data storage and modeling in full-stack applications.

API Development & Integration
Worked with REST APIs, third-party services (Plaid, Stripe, Firebase, Cloudinary), and documented endpoints using Postman.

Imama

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PROFESSIONAL PROFILE

Software Engineering undergraduate with hands-on experience in frontend, mobile, and backend development, complemented by applied work in AI-driven systems. Experienced in building cross-platform Flutter applications, designing scalable web backends, and integrating machine learning models into production-ready systems. Strong foundation in modern web technologies, API development, and data-driven applications, with a proven ability to translate research concepts into deployable software solutions.

EDUCATION

Software Engineering

National University of Sciences and Technology , Islamabad , 3.38 (2026)

INTERNSHIP EXPERIENCE

Teresol Pvt. Ltd.

24-Jun-2024 - 02-Aug-2024

• Researched Vue.js web app design with focus on state management and user interaction. • Explored distributed database design and scalability trade-offs with MongoDB–Express.js. • Investigated state machine applications (XState) for complex authentication and workflow modeling.

Al Raheem Technologies Pvt. Ltd.

16-Jun-2025 - 29-Aug-2025

• Developed RESTful APIs and secure authentication in Laravel, gaining experience in scalable web systems. • Explored distributed architectures, analyzing scalability and real-time performance trade-offs. • Strengthened research skills in data modeling, system benchmarking, and cross-platform integration with Flutter and MySQL.

FINAL YEAR PROJECT

Kisaan Khidmat – Smart AgriAssist

• Developed a cross-platform Flutter mobile application delivering AI-powered agricultural assistance with a focus on performance and usability. • Built end-to-end ML pipelines by aggregating and preprocessing 14,000+ agricultural images and multi-year crop market data, integrating trained models into the app for real-time inference. • Implemented a computer vision-based crop disease diagnosis module, optimizing model deployment for mobile or API-based predictions to help reduce crop losses. • Developed and benchmarked time-series forecasting models and surfaced price predictions through app-integrated services to support farmer decision-making. • Integrated an NLP-powered chatbot into the Flutter app to provide instant, context-aware on-field farming advice.

TECHNICAL EXPERTISE

Frontend Development

• Flutter (cross-platform mobile UI development) • Vue.js (component-based web interfaces) • Responsive UI/UX design, state management • Figma for UI prototyping and design handoff

Web & Backend Development

• RESTful API development using Laravel • Backend-frontend integration • MySQL, MongoDB (data modeling and queries) • Authentication workflows and API security concepts

Muhammad Hissan Umar

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PROFESSIONAL PROFILE

Final-year Computer Science student and Software Engineer experienced in full-stack development, backend services, and applied machine learning. Proficient in building scalable web applications using modern frameworks, implementing REST APIs, and integrating ML/DL models into production environments. Passionate about solving real problems through software and data-driven systems

EDUCATION

Bachelors in Software Engineering

School of Electrical Engineering and Computer Sciences , Islamabad , 3.03 (2026)

INTERNSHIP EXPERIENCE

Machine Learning and Intelligent Systems, Nust (MACHVIS)

17-Jun-2025 - 21-Aug-2025

Working on remote sensing projects for a real time dashboard for the currently growing crops along with analysis to provide 35% better insights for agricultural practices. This project uses ML analysis, along with Deep Learning CNN for yield prediction and LLMs for explainability. The project also focuses on creating a mutable pipeline for constant model improvements. It is already deployed on GitHub.

TUKL Deep Learning Lab

03-Jun-2024 - 30-Aug-2024

Improved Machine Learning and Deep Learning skills while building a CV recommendation system for firms using LLM agents. The system leverages instruction-set manipulation to optimize LLM behavior and produce more accurate candidate recommendations, making the hiring process significantly more efficient for medium-scale recruitment.

FINAL YEAR PROJECT

UAV Based Remote Sensing for Wheat Yield Prediction

I conducted a UAV-based remote sensing research project utilizing multispectral imagery to analyze crop growth and yield prediction. The study combined vegetation indices, canopy traits, and genotype-aware modeling with machine learning and deep learning approaches. The outcomes of this work were compiled into a structured research paper, which I successfully submitted for publication.

TECHNICAL EXPERTISE

Machine Learning Engineer

Machine Learning Engineer experienced in designing, developing, and deploying ML models to solve real-world problems. Skilled in data preprocessing, model training, evaluation, and scaling production-ready ML systems. Strong foundation in algorithms, statistics, deep learning, and software engineering, with h ...

Full Stack Development

Full-stack developer specializing in Next.js for building server-rendered and client-rendered web applications. Experienced in developing RESTful APIs, integrating databases, and implementing server-side logic for end-to-end features. Strong understanding of React architecture, routing, authentication, and pe ...

Mati Ur Rehman

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PROFESSIONAL PROFILE

Software Engineering graduate with a strong competitive-programming record. Multiple first-place finishes, ICPC regional gold (3rd in Pakistan), and top finishes in national speed contests.

Built projects include a C++ search engine, Dockerized storage/streaming services on GCP, and an ESP32-based irrigation controller. Open-source contributor to DORA-RS, implemented an Arrow::FFI bridge between C++ and Rust. Experienced with Git and cloud-native microservices.

Machine-learning and Deep learning Practitioner. Led a team to 1st in the UNOOSA region of the Kibo Robot Programming Challenge and built a YOLOv5-nano detection pipeline plus an Android controller being prepared for the ISS final.

EDUCATION

Software Engineering

SEECS , Islamabad , 3.47 (2026)

INTERNSHIP EXPERIENCE

TUKL Research and Development Lab

02-Jun-2024 - 08-Sep-2024

Understanding basics of DL using coursework. Identifying research topic related to neural architecture search. Performing literature review. Implementing the proposed architectures and evaluting them.

FINAL YEAR PROJECT

Disrupting Deepfakes through Adversarial Peturbations

Objective: Developed a defensive framework to protect digital identity by proactively "poisoning" images against malicious Deepfake manipulation. Technical Stack: Engineered the entire pipeline using PyTorch, focusing on the generation of adversarial perturbations that are imperceptible to humans but catastrophic for generative AI models. Attack Methodologies: Implemented and optimized multiple adversarial attack vectors, including Projected Gradient Descent (PGD) and Carlini & Wagner (C&W), specifically adapted for the constraints of proactive image defense. Target Architectures: Successfully demonstrated the disruption of state-of-the-art diffusion and image-to-image translation models, including FLUX, Kontext Dev, and InstructPix2Pix.

TECHNICAL EXPERTISE

OpenCV

Made a project which was focused on Object dectection. Used yolov5 nano on edge device for detection.

C++

Did a project for implementing the relevant article search engine using c++. Also lot of competitive programming experience in cpp.

Python

Used python for ML/DL related research projects.

Databases

Used both sql and nosql databases in projects.

Cloud deployment
Deployed a microservices based project on google gcp. Utilized docker images, google buckets and cloud fuctions.

Node.js
Created REST api's using Node.js backend.

Haroon Tahir

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PROFESSIONAL PROFILE

Sixth-semester Software Engineering student (3.43 CGPA) with demonstrated experience in full-stack development, robotics, and cloud-native applications. Proven ability to deliver complex projects, including a GCP-deployed PDF annotation engine and autonomous navigation software for NASA's Astrobee robot. Seeking a challenging internship or part-time role to apply and expand skills in software architecture and systems integration.

EDUCATION

BESE

SEECS , H-12 Islamabad , 3.43 (4)

INTERNSHIP EXPERIENCE

Proto IT Consultants

01-Sep-2024 - 31-Mar-2025

Developed and deployed custom Monday.com integration applications using React, Express.js, and the Monday.com SDK. Engineered robust integrations connecting Monday.com with third-party platforms including DocuSign, Gmail, and Stripe.

Arrivy

05-Jun-2024 - 05-Sep-2024

Engineered a full-stack PDF annotation and highlighting engine using React.js and a Python (Flask) backend. Deployed and managed the application on Google Cloud Platform (GCP).

FINAL YEAR PROJECT

AI-Driven UAV System for Disaster Response

Developing an autonomous UAV system for real-time rescue operations, focusing on computer vision and natural language processing for disaster scenario navigation.

TECHNICAL EXPERTISE

C++, Python, Java, Rust, JavaScript

React, Node.js, Express.js, Flask, PostgreSQL, MySQL, Google Cloud Platform (GCP), Docker, Git, ROS 2, Monday.com SDK, Make, Zapier

Muhammad Taha Salaar

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PROFESSIONAL PROFILE

Software Engineering undergraduate at NUST with strong hands-on experience in **AI research, multimodal learning, and production-grade ML systems**. Actively working as a Medical AI Research Engineer, focusing on **vision–language models, knowledge graphs, and explainable AI for healthcare applications**. Proven ability to bridge theory and practice through research-driven development, including zero-shot medical image localization, diffusion model research, and graduate-level teaching. Experienced in building and deploying **scalable LLM systems**, RAG pipelines, and end-to-end MLOps workflows using modern tools such as FastAPI, Docker, MLflow, and cloud infrastructure. Strong communicator with a track record of collaborating with clinicians, teaching advanced concepts, and delivering accessible AI solutions under real-world compute constraints.

EDUCATION

Software Engineering

SEECS , Islamabad , 3.22 (2026)

INTERNSHIP EXPERIENCE

TUKL-DLL Lab (SEECS-NCAI)

20-Jun-2023 - 10-Sep-2023

Began the internship with a strong theoretical foundation by completing Andrew Ng's Machine Learning and Deep Learning Specialization, covering supervised learning, neural networks, CNNs, sequence models, and optimization techniques. Transitioned into independent research on Diffusion Models, focusing on their mathematical foundations, forward–reverse processes, noise schedules, and training dynamics for generative modeling. Delivered a master's-level lecture on Diffusion Models, explaining core concepts, intuition, and practical implementation details to graduate students, bridging theory with real-world applications. Designed and implemented a lightweight diffusion-based generative model optimized to train efficiently on Kaggle GPU environments, making advanced generative modeling accessible without high-end compute resources.

Cybersecurity Zone

15-Jun-2025 - 26-Sep-2025

Began the internship with an in-depth research phase focused on Security Operations Centers (SOC) challenges, including alert overload, false positives, analyst fatigue, and limitations of static SOAR playbooks, supported by a structured literature review of ML- and NLP-based SOC automation techniques Conducted applied research on AI-Enhanced SOAR architectures, studying ML-based alert triage, adaptive human-in-the-loop playbooks, and NLP-driven incident summarization to reduce Mean Time to Detect (MTTD) and Mean Time to Respond (MTTR) Designed a modular, cloud-native SOAR system architecture, including alert ingestion pipelines, ML triage engines, event-driven orchestration layers, and analyst dashboards, emphasizing scalability, explainability, and extensibility Developed and evaluated machine learning pipelines for alert prioritization, leveraging supervised and clustering-based approaches
to filter false positives, assign risk scores, and support analyst decision-making with confidence estimates Implemented NLP-based incident intelligence workflows, including automated IOC extraction and concise incident summarization, enabling faster investigations and clearer handoffs between SOC analysts

FINAL YEAR PROJECT

ARIES - Automated Response and Intelligent Enterprise Security

ARIES revolutionizes SOC operations by integrating ML-driven alert triage, NLP-based summarization, and human-in-the-loop orchestration. It intelligently automates repetitive tasks, empowers analysts with contextual insights, and delivers adaptive, explainable, and resilient cybersecurity operations — advancing both innovation (SDG 9) and institutional security (SDG 16)

TECHNICAL EXPERTISE

AI Engineer (Oryns Solution)

• Designing and deploying AI/ML solutions for SaaS, mobile, and web applications. • Working on deep learning pipelines and applied MLOps workflows for model training, evaluation, and deploy ment. • Collaborating with product, design, and engineering teams to integrate AI features into production systems.

Muhammad Umar Khan

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PROFESSIONAL PROFILE

Security-focused Software Engineer with over a year of backend development experience in Python and Tornado, now transitioning into cybersecurity. HTB **Certified Defensive Security Analyst (CDSA)** with practical expertise in penetration testing, vulnerability assessment, and secure code practices. Combines deep knowledge of software architecture and APIs with security proficiency in Docker, Cloud environments, and Endpoint Security. Seeking to leverage dual strengths in development and security monitoring to build resilient systems.

EDUCATION

Bachelors of Software Engineering

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

INTERNSHIP EXPERIENCE

WALEE

04-Dec-2023 - 29-Feb-2024

FINAL YEAR PROJECT

Dehaari

Mobile app which connects workers (electricians, plumbers, etc) with customers. Just like indrive

TECHNICAL EXPERTISE

Security Operations & Analysis

Proficient in Security Operations Center (SOC) analysis, security monitoring, and incident response. Skilled in analyzing event logs, managing Endpoint Security, and utilizing SIEM (Security Information and Event Management) as well as IDS/IPS (Intrusion Detection/Prevention Systems).

Vulnerability Assessment & Penetration Testing

Experienced in conducting penetration testing and vulnerability assessments to identify and mitigate system risks. Holds knowledge in broader information security practices and is a Certified Defensive Security Analyst (CDSA).

Software Development & Infrastructure

Competent in full-stack development, including creating REST APIs and database models. Proficient with MySQL databases, Cloud technologies, and Docker for containerization. Familiar with version control and agile workflows

Ibrahim Qaiser

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PROFESSIONAL PROFILE

I am a dedicated full-stack developer pursuing a Bachelor's degree in Software Engineering from NUST, expected July 2026. With experience in MERN, GoLang, and Next.js, I previously led backend development for a Desktop-POS project, which concluded in July 2025. Currently, I work full-time remotely, focusing on delivering innovative, AI-driven solutions. Proficient in various programming languages and cloud technologies, I excel in collaborative environments where I prioritize user experience and project success.

EDUCATION

Bachelor of Engineering in Software Engineering

School of Electrical Engineering and Computer Sciences (SEECS) , Islamabad , 3.13 (2026)

INTERNSHIP EXPERIENCE

EMRChains

01-Jun-2024 - 31-Aug-2024

Worked on AI-driven solutions to help make use of existing Machine Learning models more efficiently. Make use of web development to aid, building AI backed WhatsApp chatbot, provided me great integration experience.

DesktopPOS MS

01-Nov-2024 - 31-Jul-2025

This is a remote based contracted project, which itself is a management system of kiosks-based restaurants system. Designed to mitigate client's based requirements to design scalable solution.

FINAL YEAR PROJECT

CallistoAI

A conversational agentic CI/CD pipeline builder to aid developers to build, test and deploy directly via CLI and wil aid developers to learn CI/CD operations not with steep curve.

TECHNICAL EXPERTISE

Full-Stack Engineering

Worked professionaly on backend technologies like Node.js and Nest.js. Learning Go in detailed to handle concurreny related backend systems.

DevOps Engineering

Worked on CICD pipeline to cut the deployment practices by 30%, making systems more efficient.

Muhammad Athar

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PROFESSIONAL PROFILE

With a passion for mathematics and computer science, I am determined to bring about a positive change in the world through research and development by making things easier and more convenient for the general public. I am also interested in sharing my knowledge with anyone who is interested and believe that knowledge sharing is one of the key things that have led to the exponential growth of technology.

EDUCATION

Bachelors of Engineering in Software Engineering

SEECS , Islamabad , CGPA: 3.9/4 (2026)

INTERNSHIP EXPERIENCE

TUKL-NUST R&D Center

03-Jun-2024 - 06-Sep-2024

Designed and Implemented a CNN + Transformer-based Deep Learning Architecture in PyTorch for the classification of EEG Signals into normal and abnormal which achieves State-of-the-Art performance on NMT Dataset collected in Military Hospital Rawalpindi.

RheinMain University of Applied Sciences, Wiesbaden, Germany

10-Jun-2025 - 06-Sep-2025

Performed independent research on weather forecasting and devised a multi-modal flood forecasting framework which utilizes ERA5 weather data and global river discharge maps, trained on a Sentinal-1 satellite imagery based flood dataset.

FINAL YEAR PROJECT

EEGWriter: Multimodal Deep Learning Framework for Automated EEG Diagnostic Report Generation

Electroencephalography (EEG) is a critical diagnostic tool in neurology, widely used for identifying abnormalities such as epilepsy, seizures, and other brain disorders. Interpreting EEG signals, however, requires expert neurologists and is a time-consuming process. This project aims to bridge the gap between raw EEG data and automated clinical interpretation using large language models (LLMs). EEGWriter proposes the development of a multi-modal architecture that can generate structured EEG diagnostic reports from time-series EEG signals, patient metadata (e.g., age, gender, symptoms), and technician's notes. The generated reports follow a medical report format, including Factual Report and Impression sections. The system consists of deep learning models that extract temporal and spatial features from raw EEG data using deep learning (e.g., CNN, Transformer models), and an LLM (e.g., Qwen-3 8B) that produces natural language text conditioned on these features. The final model will aim to simulate how a neurologist writes EEG interpretations, potentially supporting telemedicine platforms, automated triage systems, and AI-assisted diagnostics.

TECHNICAL EXPERTISE

C++

Honed my C++ skills through regular competitive programming on platforms like CodeForces and LeetCode.

Python

Extensively used Python throughout many of my development as well as research-based projects.

Git

Collaborated with many individuals via GitHub by utilizing Git. https://github.com/AtharRizwan

Linux Proficiency
Using Arch Linux as my primary OS with i3wm window manager and nvim as text editor for an year has made me very familiar with the terminal and all its complexities.

Ahmed Bilal

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PROFESSIONAL PROFILE

Final-year Software Engineering student at NUST with production experience in **AI/ML, automation** and **backend architecture**. Skilled in building **context-aware agents** and **RAG pipelines**, with hands-on experience running local LLMs via **Ollama** and exploring the basics of **fine-tuning**. Recently, I have been working with the Model Context Protocol **(MCP)** and **MLOps** tools to bridge the gap between experimental AI and reliable production code.

My focus is on designing solutions that address real operational needs, during my time at **Antematter**, I architected multi-agent systems that automated **90% of bookings** for a global client. I maintain a strong foundation in data structures and algorithms (Top 3% on LeetCode) and am eager to join engineering teams where I can contribute to autonomous AI systems, scalable backend architectures, and cloud-native solutions.

Full projects and achievements are detailed in my CV: https://drive.google.com/file/d/1MX2Ll0gQe3VkI3Siwj3tIIxw4qG8YQ8R/view?usp=sharing

Portfolio: https://ahmedbilal.vercel.app

Github: https://github.com/ahmedbilal008

EDUCATION

Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.43/4.00 (2026)

INTERNSHIP EXPERIENCE

ANTEMATTER

02-Jul-2025 - 17-Oct-2025

AI Intern - Contributed to a multi-agent email automation system that now automates 90% of bookings for a global black-car client that operates in 40+ countries and has served 60% of the Fortune 100. - Designed deterministic prompt templates, intent classifiers, and extraction schemas; integrated LLM components with private booking APIs via n8n multi-workflow HTTP calls to automate client requests and escalate edge cases to human agents. - Contributed across the lifecycle of a generic AI agent framework, from development and testing to documentation and refinement, ensuring robust schema validation and consistent output handling.

FINAL YEAR PROJECT

Federated Data Lakes and Intelligent Healthcare Management for Pakistan

Developing a healthcare data platform addressing medical data fragmentation across Pakistani hospitals. Inspired by international data governance initiatives and growing awareness around patient data privacy, the system enables secure data federation while keeping patient data decentralized at individual healthcare centers. The system provides multiple portals for different user roles. Doctors can manage schedules and conduct AI-assisted checkups that help extract clinical information and insights from consultations, patients can book appointments and access their medical history, and administrative staff can oversee operations. The core challenge addressed is enabling nationwide health analytics without compromising patient privacy or hospital autonomy. When researchers need access to data for studies, the system implements temporal, minimum-privilege credentials scoped only to the specific data partitions required for approved queries. This ensures researchers access only what is necessary, and these access rights automatically expire, preventing long-term data exposure.

TECHNICAL EXPERTISE

AI/ML & Automation

My primary experience lies in building multi-agent systems and RAG pipelines. I am currently working with the Model Context Protocol (MCP) to improve agent integration and am exploring the basics of fine-tuning models. I also utilize Ollama for running local LLMs, alongside LangChain and n8n for automation. I ...

Backend & Cloud

For infrastructure, I have utilized Docker and Google Cloud Run, applying these tools both during my university coursework and while building a microservices-based video streaming platform. While I am still deepening my cloud expertise (also looking into AWS ecosystem), I can effectively containerize applicat ...

Database & MLOps

I have utilized PostgreSQL and NoSQL databases to manage data for my academic and personal projects. To improve my engineering standards, I am currently learning MLOps, understanding MLflow for experiment tracking and DVC for data versioning, aiming to bring better reliability and reproducibility to my machin ...

Ch Muhammad Umair Gosal

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PROFESSIONAL PROFILE

Software Engineering undergraduate with hands-on experience in **frontend development and blockchain application development**. Proficient in building responsive, component-based user interfaces using **React.js**, as well as developing and interacting with **Ethereum smart contracts**. Strong understanding of clean code practices, API integration, and modern development workflows, with a growing focus on decentralized and automation-driven systems.

EDUCATION

BE Software Engineer

SEECS , Islamabad , 2.3 (2026)

INTERNSHIP EXPERIENCE

Accrual Hub

23-Jun-2025 - 18-Aug-2025

Frontend Development Intern working with React.js. Developed responsive UI components, implemented reusable layouts, integrated APIs, and collaborated with the team using modern developer tools (Git, VS Code, npm). Focused on clean code, component-based architecture, and performance optimization.

FINAL YEAR PROJECT

FleaderAI - A Memory Centric Lead Relationship Automation

FleaderAI is an AI-driven, end-to-end lead relationship automation platform designed to address inefficiencies in traditional customer relationship management (CRM) systems. Conventional lead management heavily depends on manual cold outreach, fragmented customer data, and stateless interactions, resulting in lost leads, poor personalization, and low conversion rates. FleaderAI introduces memory-centric conversational agents that automate lead discovery, outreach, follow-ups, and nurturing while maintaining contextual memory of each lead's preferences, interaction history, and engagement patterns. The system aims to automate over 70% of the lead lifecycle, enabling sales teams to focus on high-value decision-making and relationship building.

TECHNICAL EXPERTISE

Frontend Development

React.js, JavaScript (ES6+), HTML5, CSS3, Responsive Design

Blockchain Development

Solidity, Ethereum, Smart Contracts, Foundry, Ethers.js

Tools & Technologies

Git, GitHub, npm, VS Code

Software Engineering Practices

Component-Based Architecture, API Integration, Smart Contract Testing, Version Control

Sharjeel Sajid

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PROFESSIONAL PROFILE

Final-year Software Engineering undergraduate at NUST (Class of 2026) with a strong foundation in algorithmic problem-solving, demonstrated by solving over 400 LeetCode questions. Passionate about Robotics, AI, and Open Source, with practical experience contributing to the DORA-RS robotic operating system and competing as a global finalist in the JAXA Kibo Robot Programming Challenge. Proficient in C++, Rust, and Cloud Microservices, with a proven track record of engineering high-performance solutions, including a custom search engine and adversarial deepfake disruption models.

EDUCATION

Software Engineering

SEECS , Islamabad , 3.34 (2026)

INTERNSHIP EXPERIENCE

ResearchIntern | MachVisLabs,NUST

01-Jun-2024 - 31-Aug-2024

Initiated internship by building a strong foundation in Deep Learning (DL) and Computer Vision (CV) concepts. Conducted research on "Neural Architecture Search (NAS) on Entity Recognition" to explore optimal model architectures. Utilized the NNI (Neural Network Intelligence) library to experiment with and identify optimal architectures for the assigned research problem.

FINAL YEAR PROJECT

Adversarial Disruption of Deepfake Generation Models

Developing a system to disrupt deepfake generation by implementing adversarial attacks on generative models. Engineering imperceptible perturbations—subtle noise added to source images that remains invisible to the human eye but prevents models from generating realistic deepfakes. Targeting state-of-the-art diffusion models, including InstructPix2Pix and Stable Diffusion 1.5, by analyzing their specific architectures to design effective disruption mechanisms.

TECHNICAL EXPERTISE

Programming Languages

C++, Rust, Python, JavaScript.

Web Development & Frameworks

React.js, Next.js, FastAPI, Microservices Architecture.

Artificial Intelligence

Deep Learning (DL), Computer Vision (CV), Generative AI

Cloud & DevOps

Google Cloud Platform (GCP), Docker, Cloud Functions.

Robotics & IoT

DORA-RS (Robotic Operating System), ESP32, Embedded Systems, IoT Sensors & Automation.

Core Concepts
Data Structures & Algorithms (400+ LeetCode problems), Object Detection in Constrained Environments, Search Algorithms (Inverted Index, Ranking).

Muhammad Affan Amir

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PROFESSIONAL PROFILE

Results-driven **AI Engineer and Software Developer** with a strong foundation in full-stack web development and applied machine learning. Experienced in designing scalable, production-ready systems using modern frameworks, cloud platforms, and agentic AI architectures.

EDUCATION

Software Engineering

SEECS , Islamabad , 2.98 (2022)

INTERNSHIP EXPERIENCE

Systems Limited

16-Jun-2025 - 08-Aug-2025

Worked on the development of an internal Resource Management Platform for organizational use, contributing to both frontend and backend components. Built responsive and user-friendly interfaces using modern UI frameworks such as React, and implemented efficient MySQL database management for handling resource data, user records, and system operations. Collaborated with the team to ensure scalability, performance, and maintainability of the platform.

Code Ninja Consulting

17-Jun-2024 - 30-Aug-2024

Worked with the MERN stack to develop a TypeScript-based To-Do application, focusing on clean architecture, state management, and robust input validation to ensure data integrity and a smooth user experience. The implementation was reviewed and refined through feedback from senior developers, strengthening code quality and best practices. Additionally, collaborated with the development team on a client-facing project to deliver AI-driven branding advertisements for businesses, where I was responsible for prompt enhancement and optimization techniques to achieve high-quality, consistent, and business-aligned outputs from AI models.

FINAL YEAR PROJECT

Non Technical Cofounder Super Agent (Ecommerce)

A unified AI-powered platform designed for small e-commerce businesses to automate and streamline operations through specialized agents such as Customer Support, Email Marketing, and Product Research. All agents are intelligently orchestrated by a central Super Agent that maintains full organizational context, enabling coordinated decision-making, consistent brand communication, and efficient task execution. Empowering founders to scale faster without technical overhead.

TECHNICAL EXPERTISE

AI Engineer

Skilled in developing and integrating AI-driven solutions into real-world applications, with a focus on LLMs, agent-based systems, and intelligent automation. Experience with Large Language Models (LLMs), RAG (Retrieval-Augmented Generation) pipelines, and integrating OpenAI/Anthropic APIs into production app ...

Full Stack Developer

Experienced in designing and developing scalable web applications using modern technologies such as JavaScript/TypeScript, React, Next.js, Node.js, and RESTful APIs. Proficient in building responsive user interfaces, managing application state, and implementing secure backend services. Strong background in re ...

Muhammad Zohaib

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PROFESSIONAL PROFILE

I am a Software Engineering student with hands-on experience building full-stack applications through freelance and academic projects. I have worked on systems like a payment orchestration platform integrating multiple payment providers and B2B trading platform. I mainly work with **React, Next.js, Django REST Framework, NestJS, Rust (Axum), and PostgreSQL**. I am comfortable building APIs, dashboards, role-based systems, handling payment flows, webhooks, and secure data handling. I focus on writing clean, working code and learning by building production-level projects.

EDUCATION

BE Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.42 (2026)

INTERNSHIP EXPERIENCE

MachVis Lab SEECS

16-Jun-2025 - 29-Aug-2025

During my internship, I contributed to the development of a scalable healthcare management system by transitioning its core architecture from a monolithic to a microservices-based framework. My work involved designing and implementing backend services for Appointments, Checkups, and Lab Tests, ensuring seamless inter-service communication and data consistency through event- driven patterns. On the frontend, I developed a specialized data collection application using Next.js, integrating the Web Audio API for automated recording and implementing HCI principles to optimize doctor-user interfaces. Additionally, I managed security through Role-Based Access Control (RBAC) and conducted extensive integration testing to validate complex medical workflows.

FINAL YEAR PROJECT

Federated Data Lakes and Intelligent Healthcare Management for Pakistan

For my final year project, I built a complete Hospital Management System with dedicated portals for patients, doctors, receptionists, lab technicians, and pathologists. I developed dynamic lab test templates that can be configured through the UI, an appointment scheduling system, and smooth patient management workflows. I also integrated AI features like audio-based checkup analysis, automated medical history summaries, and symptom-based doctor matching. On the admin side, I implemented tools to manage doctors, staff, departments, drug inventory, and lab test configurations. My main focus was full-stack development, while the team handled the data lake and federation architecture.

TECHNICAL EXPERTISE

Programming Languages

Proficient in JavaScript, Python, and Rust, with working knowledge of C/C++. Applied these languages across web development, backend services, and system-level programming tasks.

Frontend Development (React / Next.js)

Skilled in developing modern, responsive user interfaces using React and Next.js. Built dashboards, admin panels, CRM systems, and multi-role applications with a focus on usability, performance, and maintainable component architecture.

Backend Development (APIs & System Design)

Strong experience in backend development using RESTful APIs and service-oriented architectures. Built scalable and secure backend systems handling authentication, business logic, background workflows, and third-party integrations

AI & LLM Integrations
Integrated AI and large language models into applications for natural language commands, data querying, workflow automation, medical data summarization, and intelligent search and matching features.

Payment Systems & Orchestration (FinTech)
Hands-on experience building a payment orchestration platform integrating multiple payment service providers across regions. Implemented checkout sessions, direct card payments, OTP/PIN flows, payment verification, routing rules, and automatic fallback mechanisms.

Muhammad Junaid Akram

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PROFESSIONAL PROFILE

Final-year Software Engineering student at NUST with a focus on breaking down technical problems into logical, structured solutions. Practical application involves designing web-based interfaces, with a particular interest in the intersection of **web engineering** and **marketing technology** to address product and growth challenges.

EDUCATION

Software Engineering

SEECS , Islamabad , 2.7 (2022)

INTERNSHIP EXPERIENCE

Brentwood Global

10-Jun-2025 - 11-Aug-2025

Improved web module performance and structure by building with React and Next.js. Designed responsive interfaces using Tailwind CSS, focusing on best practices for layout and cross-device compatibility. Integrated real-time chat via WebSockets and developed dynamic forms with client-side validation to ensure a smooth and reactive user experience.

FINAL YEAR PROJECT

TaxSimplify

TaxSimplify is an automated tax management platform designed to simplify filing returns via the FBR IRIS portal. It features a Tax Mapper Engine that handles complex calculations and applies legal deductions automatically. The system ensures Zero-Gap Wealth Reconciliation, eliminating the discrepancies that typically lead to FBR audits. By translating technical jargon into plain-language prompts, it makes tax compliance accessible to the average citizen. It transforms a high-friction administrative chore into a seamless, one-click experience for any Pakistani taxpayer.

TECHNICAL EXPERTISE

Web Development (GitHub: https://github.com/junaidakram1)

I build web interfaces with React.JS and Next.JS, using JavaScript / TypeScript to keep the code solid and predictable. My focus is on utilizing best coding practices to build clean, scalable and easy-to-use/responsive interfaces that function smoothly across all screen sizes.

Hadia Ali

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PROFESSIONAL PROFILE

I have a hands-on experience in frontend web development, exposure to full-stack application workflows, and a solid foundation in UI design principles. I have worked on building modern, responsive, and user-friendly web applications with a focus on clean code, performance, and maintainability. I enjoy translating Figma and UI/UX designs into pixel-perfect, interactive interfaces while ensuring accessibility, consistency, and smooth experiences across devices. I am eager to further deepen my frontend expertise, work on complex real-world products, and continue improving my skills in building scalable, high-quality user interfaces.

EDUCATION

Bachelors of Software Engineering

School of Electrical Engineering and Computer Science (SEECS) , Islamabad , 3.06 (2026)

INTERNSHIP EXPERIENCE

9T5 Pty Ltd

08-Jul-2025 - 02-Sep-2025

Worked as a frontend web developer intern on a job-oriented platform, contributing to frontend development, API integration, and responsive UI components using React, Next.js, TypeScript, and Tailwind CSS, with a focus on performance and clean code.

9T5 Pty Ltd

22-Jul-2024 - 02-Sep-2024

Worked as a Frontend Web Developer Intern, building web projects using HTML, CSS, and JavaScript, including a functional TODO List application. Developed dynamic frontends with React and Next.js, focusing on component-based architecture, and built a coffee ordering website with responsive UI and Firebase.

FINAL YEAR PROJECT

Cybershield : Cybersecurity Awareness & Incident Reporting Portal

A multilingual web-based platform designed to strengthen cybersecurity awareness in Pakistan by combining interactive learning modules, AI-assisted content generation, realistic multi-vector phishing simulations, and continuous risk evaluation, reinforced through gamification and role-based dashboards.

TECHNICAL EXPERTISE

Frontend Development

Built responsive, user-focused web interfaces using HTML, CSS, and JavaScript, and worked with React and Next.js for modern, component-based development. Worked with TypeScript and Tailwind CSS to create scalable, maintainable, and visually consistent UIs.

Tools and frameworks

Worked with React, Next.js, Node.js, Supabase, Firebase, MongoDB, Tailwind CSS, TypeScript, Git, Eclipse, and Jest for building and maintaining modern web applications. For design, worked with Figma

Backend & Database Technologies

Worked with Firebase, Supabase, and MongoDB for backend integration, authentication, and database management, along with Git for team-based development.

Design & Prototyping
Worked with Figma to design user-friendly, visually cohesive interfaces with a focus on usability and layout harmony. Also worked with Canva.

Abdul Moiz

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PROFESSIONAL PROFILE

I am an aspiring AI and machine learning professional with hands-on experience across research, development, and practical applications. During my internship at NCAI, TUKL, I focused on EEG analysis and explainable AI, developing deep learning models to classify normal and abnormal EEG segments, applying interpretability techniques such as Grad-CAM, LIME, and SHAP, and building a pipeline for automated EEG report generation using large language models (LLMs). At RheinMain University of Applied Sciences, I worked on super-resolution of satellite images, leveraging diffusion-based generative models to enhance image clarity and preserve fine-grained details. In addition to my internships, I have completed freelance projects in AI and web development, building end-to-end solutions that demonstrate my skills in both machine learning and full-stack development.

EDUCATION

Software Engineering

SEECS , Islamabad , 3.14 (2022)

INTERNSHIP EXPERIENCE

NCAI TUKL

03-Jun-2024 - 31-May-2025

During my internship, I worked on multiple interdisciplinary projects involving machine learning, computer vision, and explainable AI. I developed explainable AI models for EEG abnormality analysis and automated report generation using large language models (LLMs). I also built and trained models on time-series and image data collected from a Wacom IoT device, applying deep learning techniques for pattern recognition. Additionally, I worked with eye-tracking data to identify user focus regions and integrated multiple computer vision techniques for data analysis and visualization. This experience strengthened my skills in end-to-end model development, data processing, and the practical application of AI in real-world healthcare and human–computer interaction scenarios.

Rhienmanin University of applied sciences(DAAD Internship)

11-Jun-2025 - 09-Oct-2025

During my internship at RheinMain University of Applied Sciences, I worked on enhancing the resolution of satellite images with a focus on diffusion-based super-resolution models. I explored state-of-the-art generative techniques to improve image clarity and preserve fine-grained details, experimenting with different model architectures and training strategies. This work allowed me to gain hands-on experience in applying deep learning for remote sensing and image enhancement, as well as understanding the challenges of high-resolution satellite imagery.

FINAL YEAR PROJECT

NeuroXplain

I am currently working on my final year project focused on EEG analysis and automated report generation. I am developing deep learning models to classify normal and abnormal EEG segments and applying explainable AI techniques such as Grad-CAM, LIME, and SHAP to identify and visualize clinically significant abnormal regions. Alongside this, I am building a pipeline that converts model predictions and extracted EEG features into structured, human-readable reports using large language models (LLMs). This work aims to make EEG analysis more transparent and clinically interpretable, bridging the gap between AI predictions and actionable insights for healthcare professionals.

TECHNICAL EXPERTISE

Machine Learning & Deep Learning

Developed deep learning models for EEG abnormality detection and satellite image super-resolution. Applied time-series analysis for EEG and computer vision techniques for image enhancement.

Explainable AI (XAI)

Implemented Grad-CAM, LIME, SHAP, and Integrated Gradients to interpret EEG model predictions. Compared model-identified abnormal regions with expert-labeled ground truth using metrics like IoU, precision, and coverage

Large Language Models (LLMs)

Built pipelines to convert EEG model outputs and features into structured, human-readable reports. Applied LLMs to automate report generation, making AI predictions clinically interpretable.

Computer Vision

Worked on eye-tracking data to identify regions of focus and applied multiple CV techniques for analysis. Implemented super-resolution of satellite images using diffusion-based generative models to enhance clarity and fine-grained details.

Web Development & Full-Stack AI Integration

Built AI-powered web applications, including systems for data collection, visualization, and query-based information retrieval. Completed freelance projects involving end-to-end solutions with frontend, backend, and AI integration.

Muhammad Faiq Qazi

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PROFESSIONAL PROFILE

Software engineer from NUST

EDUCATION

Software Engineering

SEECS , Islamabad , 2.96 (2022)

INTERNSHIP EXPERIENCE

Shhadiyana

06-Jun-2024 - 06-Oct-2024

• Developed responsive user interfaces using Figma, React.js, and Next.js, while implementing backend functionality and Schema implementation with Express.js and PostgreSQL, through robust RESTful APIs. • Worked on mobile application for Shadiyana Solutions using React Native, integrating frontend and backend features in existing code along with Firebase chat and image storage in S3 bucket. • Migration of the website's deployment from AWS Elastic Beanstalk to a containerized solution using Amazon ECS and ECR, implementing Terraform for efficient infrastructure management and version control.

Funavry technologies

06-Jun-2025 - 19-Sep-2025

Worked on a multi-agent AI system, with primary responsibility for integrating Google services including Google Docs, Forms, Sheets, and Meet into the agentic workflow. Conducted feasibility and cost analysis research for cloud infrastructure and third-party billing services, supporting informed technology decisions for ongoing projects. Explored and evaluated emerging AI technologies, including workflow automation platforms (n8n) and voice-based agentic platforms such as Retell and Eleven Labs

FINAL YEAR PROJECT

Explainable AI For EEG epileptic disorders (NeuroXplain)

NeuroXplain is an explainable AI framework designed to make EEG-based neurological disorder classification transparent, interpretable, and clinically meaningful. It combines deep learning models (such as CNNs or Transformers) with state-of-the-art explainability techniques including SHAP, LIME, Grad-CAM, and Integrated Gradients to reveal which EEG channels, time windows, and frequency bands drive model decisions. By grounding predictions in neurophysiological evidence and visual explanations, NeuroXplain aims to bridge the gap between high-performance EEG classifiers and clinician trust, enabling reliable analysis of disorders using datasets like TUH EEG, CHB-MIT, and Bonn EEG.

TECHNICAL EXPERTISE

Experience

Upwork Freelancer (Computer Vision & LLM Engineering) Oct 2024– Present Remote • Specialized in delivering computer vision and large language model (LLM) solutions for diverse client requirements. • Designed and developed end-to-end AI systems, providing customized machine learning solutions tailored to ...

Waqas Ali Qureshi

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PROFESSIONAL PROFILE

Software Engineering undergraduate at the National University of Sciences and Technology (NUST) with hands-on experience building scalable, production-grade web and mobile applications. Proven ability to deliver end-to-end solutions across frontend, backend, and cloud infrastructure, with experience at fast-growing startups including a Y Combinator–backed company. Strong background in JavaScript/TypeScript ecosystems, cloud deployments, and DevOps automation, complemented by research exposure in AI-driven systems and multimodal machine learning. Adept at collaborating in cross-functional teams, optimizing systems for performance and cost, and translating complex requirements into reliable, user-focused software solutions.

EDUCATION

BESE

SEECS , Islamabad , 3.2 (2026)

INTERNSHIP EXPERIENCE

Markaz Technologies (YC W22)

01-May-2026 - 01-Sep-2026

Revamped the Reseller Portal using Next.js, simplifying authentication, implementing a complete order flow, and ensuring full mobile responsiveness. Migrated authentication from Google OAuth (NextAuth) to phone number–based login, improving accessibility for the target user base. Enhanced SEO and discoverability by integrating sitemaps with Google Search Console and implementing schema.org structured data (JSON-LD) for product pages. Integrated the Atlas Chatbot to improve customer interaction and support experience on the reseller platform. Developed and improved supplier-side workflows, including editable resubmissions for rejected listings, and contributed fixes and enhancements to the Admin Portal. Enhanced the EasyPaisa mini app by resolving bugs, adding new features, integrating EasyPaisa authentication and payments, and setting up server-side logging using AWS Amplify and CloudWatch. Managed and optimized AWS Lambda functions, including deployment, updates, and troubleshooting using AWS SAM. Coordinated with GoDaddy for domain and DNS management to ensure high availability and uptime. Actively diagnosed and resolved user-reported production issues, ensuring minimal disruption to business-critical operations. Successfully completed the first rollout of supplier onboarding, reducing manual effort and enabling scalable onboarding of new suppliers.

Glowlogix

01-Jul-2024 - 01-Sep-2024

Got a grip on important non-technical things like; working with a team, how product based companies work, etc. and technical things like; Git, SDLC, better coding practices, etc. Basically, having less experience with working in professional environments I want to make the best out of this opportunity and fill this gap.

FINAL YEAR PROJECT

FleadrAI

Conducting research on the development of an AI-driven lead generation framework capable of automating over 70% of the prospect lifecycle. The system integrates large language models (LLMs) with a dynamic “Lead Memory Vault” to enable context-aware and personalized outreach. Additionally, web crawlers utilizing headless browsers are being designed to populate a multi-zone, replicated database architecture, with optimization through indexing strategies and read replicas.

TECHNICAL EXPERTISE

Frontend Development

Experienced in building responsive, high-performance web and mobile interfaces using React.js, Next.js, and React Native. Skilled in creating user-centric UIs, handling complex state, integrating APIs, and optimizing applications for SEO, accessibility, and mobile responsiveness.

Backend Development

Proficient in developing scalable backend services using Node.js, Express.js, NestJS, Prisma, tRPC, and Socket.io. Strong understanding of RESTful APIs, authentication systems, real-time communication, and clean backend architecture.

Cloud & Serverless Architecture

Hands-on experience deploying and managing cloud-native applications using AWS Amplify, AWS Lambda, AWS SAM, Firebase, Render, Vercel, and Heroku. Comfortable with serverless workflows, environment configuration, logging, and production troubleshooting.

DevOps & Infrastructure Automation

Skilled in automating infrastructure and deployment pipelines using Docker, Kubernetes, Terraform, Ansible, and GitHub Actions. Built automated CI/CD workflows and infrastructure-as-code solutions to improve reliability, scalability, and deployment speed.

Databases & Data Management

Experienced with both SQL and NoSQL databases including MongoDB, PostgreSQL, MySQL, focusing on schema design, indexing strategies, query optimization, and scalable data persistence.

Muhammad Owais Khan

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PROFESSIONAL PROFILE

Distinguished Software Engineering student at NUST-SEECS with specialized expertise in cybersecurity,secure full-stack development and AI/ML. Proven track record of delivering innovative solutions across MERN Stack, Flutter, and Python ecosystems while maintaining rigorous security standards. Gold Medalist with hands-on experience in threat mitigation, vulnerability analysis, and enterprise-level infrastructure protection through internships at Pakistan Telecommunication Authority. Combines deep technical proficiency with demonstrated leadership capabilities to architect resilient, scalable systems. Certified in Google Cybersecurity and multiple development frameworks, ready to drive technological innovation while safeguarding critical digital infrastructure in high-impact engineering roles.

EDUCATION

Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.24 (2026)

INTERNSHIP EXPERIENCE

Pakistan Telecommunication Authority (PTA), Islamabad

01-Jun-2025 - 27-Aug-2025

• Gained hands-on experience with Windows API (WinAPI) for memory management and process manipulation. • Worked on system registry analysis, vulnerability assessments, and network hardening practices. • Assisted in documenting technical procedures related to OS memory, registry, and system-level programming. • Contributed to compliance and secure configuration tasks for national-level infrastructure.

CodSoft – Kolkata, West Bengal, India

01-Aug-2023 - 01-Sep-2023

• Collaborated on software development projects, enhancing technical proficiency in Python and Flutter. • Gained practical experience in programming and problem-solving in a professional setting.

FINAL YEAR PROJECT

InnBotics — The AI Orchestration Layer Powering Next-Generation Hospitality Systems

To transform hostel management by delivering an AI-driven platform that automates operations, personalizes guest experiences, and empowers managers with real-time insights, fostering efficiency and hospitality excellence. Overview InnBotics transforms hostel management by integrating artificial intelligence, 3D visualization, and IoT. The system includes: Booking & FAQ Chatbot: Handles guest inquiries, reservations, and payments in natural language. Local Concierge Chatbot: Recommends nearby attractions, dining, and historical insights. Operations Manager AI: Automates housekeeping, maintenance, and staff coordination. 3D Interactive Model: Allows guests to explore the hostel virtually, view room availability, and book rooms. Smart Rooms: Enables guests to control devices (lights, AC) via app or chatbot. Mission: To streamline hostel operations and elevate guest satisfaction with 24/7 AI support and immersive technology. Vision: To lead smart hospitality, making hostels tech-enabled, guest-centric spaces globally by 2030. Features Guest-Facing Features AI Chatbots: Book rooms, answer FAQs, and provide local recommendations in multiple languages. Example: "Book a quiet room for Friday" → Suggests Room 101 with a 3D view. 3D Hostel Explorer: Rotate/zoom a 3D model, click floors to view 2D plans (Green: Available, Red: Occupied). Click rooms for 360° views, details, and booking options. Smart Room Control: Manage lights, AC, and locks via mobile app or chatbot. Personalized Experience: Save preferences (e.g., room type) and get tailored suggestions (e.g., nearby vegan cafes). Loyalty Program: Earn discounts for repeat bookings. Operational Features Automation: Auto-assign housekeeping tasks post-check-out. Generate e-keys (QR/NFC) for check-in. IoT Integration: Detect maintenance issues (e.g., leaks) via sensors. Alert staff to anomalies (e.g., open doors). Analytics: Real-time dashboards for

occupancy, revenue, and chatbot performance. Predict demand with machine learning. Admin Dashboard: Configure settings, override AI, and view escalations. Security & Compliance AES-256 encryption and GDPR compliance. Role-based access and audit logs.

TECHNICAL EXPERTISE

Core Programming

I am comfortable writing code in C/C++, Python, and JavaScript. I have also picked up Dart for Flutter development and worked with PHP and SQL for various projects.

Web development

I build full-stack web applications using the MERN Stack. I'm familiar with HTML5, CSS3, and creating RESTful APIs.

Mobile development

I've developed several mobile apps using Flutter, which I really enjoy because you can build for both iOS and Android with one codebase.

Cybersecurity tools

Through my PTA internship and coursework, I've gained experience with Kali Linux, Wireshark, SIEM solutions, and tools like Nmap and Burp Suite. I understand the basics of penetration testing and vulnerability assessment.

Database Management

MySQL, PostgreSQL, MongoDB, Firebase - relational and NoSQL database design, optimization, and administration

Specialized Skills

Windows API (WinAPI) programming, System-level programming, Secure authentication protocols, IoT security, Cryptographic implementations

Asna Maqsood

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PROFESSIONAL PROFILE

Motivated Software Engineering undergraduate with a strong academic record and hands-on experience in full-stack development, mobile app development, and artificial intelligence. Experienced in building real-world systems using modern technologies including MERN stack, Flutter, and AI-driven solutions. Passionate about problem-solving, continuous learning, and applying machine learning and agentic AI techniques to develop scalable, user-focused software products. Seeking graduate opportunities where I can contribute technically while further developing my expertise in software engineering and intelligent systems.

Link to my resume: https://asnamaqsoodresume.vercel.app/

EDUCATION

Software Engineering

SEECS, NUST , Islamabad , 3.68 (2022)

INTERNSHIP EXPERIENCE

ScriptExp Pvt.Ltd.

02-Jun-2025 - 01-Aug-2025

Completed a 9-week software & AI internship (288+ hours) with hands-on exposure to industry workflows and best coding practices. Gained practical experience in Python and JavaScript, focusing on logic building, debugging, and clean code principles. Worked with Git version control, understanding collaborative development and team-based coding practices. Developed a strong foundation in Artificial Intelligence and Machine Learning, including: Supervised & unsupervised learning, Neural networks, Data preprocessing (cleaning, normalization, missing values handling). Implemented and tested machine learning algorithms such as: Linear Regression, Logistic Regression, Decision Trees. Actively contributed to dataset preparation, model training, and evaluation using scikit-learn. Played a key role in the development of an AI-Based Smart Career Recommendation System, including: Research on recommendation techniques Dataset collection and preprocessing NLP-based skill extraction from user input Career path prediction using ML models Integrated AI models with a web-based frontend, connecting backend logic with a user-friendly UI. Conducted end- to-end system testing, bug fixing, and performance optimization to improve model accuracy. Prepared technical documentation and delivered a final project demo, incorporating feedback for future improvements.

Prograsec, Faisalabad

01-Aug-2025 - 31-Aug-2025

Completed an AI-focused internship at PrograSec, working on real-world, production-oriented artificial intelligence applications. Designed and developed FastAPI-based web applications, creating efficient backend services and RESTful APIs for AI-driven systems. Built and deployed Retrieval-Augmented Generation (RAG) projects, integrating: Document ingestion and preprocessing, Vector databases for semantic search, Large Language Models (LLMs) for context-aware responses Worked on AI chatbot systems, including an Interview Bot capable of: Asking domain-specific interview questions, Analyzing user responses, Providing intelligent, context-aware interactions Implemented NLP pipelines for text processing, information retrieval, and response generation. Integrated AI models with web backends, ensuring smooth communication between APIs, databases, and AI components. Gained hands-on experience with prompt engineering, model tuning, and evaluation of LLM-based systems. Collaborated with the development team to test, debug, and optimize AI applications for performance and scalability. Followed secure coding practices and structured project workflows, aligning development with industry standards.

FINAL YEAR PROJECT

InnBotics: AI-Powered Smart Property Management System

InnBotics is an intelligent, AI-driven hotel management system designed to automate and enhance end-to-end hotel operations and

guest services. The system leverages autonomous AI agents to handle tasks such as guest interaction, service requests, and operational coordination, reducing manual workload and improving efficiency. The project consists of a comprehensive full-stack web application with role-based dashboards for administrators, hotel staff, and guests, alongside dual mobile applications developed for both guests and staff. An AI-powered chatbot is integrated to provide real-time assistance, handle inquiries, and manage service requests in a conversational manner. The system also includes intelligent task management features to streamline internal hotel workflows, with IoT integration to enable smart hotel functionalities. InnBotics focuses on scalability, modular system design, and real- world applicability, combining full-stack development, mobile development, and artificial intelligence to deliver a robust and user- centric hotel management solution. Tech stack used: Backend: Node.js, Express.js, PostgreSQL, Redis, Firebase Admin SDK Frontend (Web): React.js, Material-UI (MUI) Mobile Apps: Flutter, Firebase Google Places API SmartThings (IoT)

TECHNICAL EXPERTISE

Programming Languages

Proficient in C, C++, Java, and Python, with a strong foundation in object-oriented programming, data structures, algorithms, and problem-solving. Experienced in writing clean, efficient, and maintainable code for academic and real-world projects.

Full-Stack Web Development

Experienced in developing full-stack web applications using HTML, CSS, JavaScript, React, Tailwind CSS, Node.js and Express.js. Skilled in building responsive user interfaces, implementing backend logic, handling authentication, and integrating databases using the MERN stack.

Artificial Intelligence & Machine Learning

Strong understanding of machine learning, deep learning, and reinforcement learning concepts, with practical experience in implementing AI-driven systems such as intelligent agents, chatbots, and game-playing agents. Familiar with model training, evaluation, and real-world AI applications.

Agentic AI & Intelligent Systems

Experience in designing and developing autonomous, agent-based systems capable of decision-making and task coordination. Applied agentic AI concepts in projects involving intelligent workflow management and conversational AI systems.

Mobile Application Development

Hands-on experience in building cross-platform mobile applications using Flutter. Capable of designing intuitive user interfaces, managing application state, and integrating backend services and databases for real-time functionality.

Databases & Data Management

Skilled in working with relational and NoSQL databases including MySQL and MongoDB. Experienced in database design, data modeling, and performing efficient CRUD operations for scalable applications.

Backend Development & APIs

Experience in building backend services and RESTful APIs using FastAPI, Node.js, and Express.js. Familiar with API design principles, request handling, and integrating backend services with frontend and mobile applications.

Version Control & Development Tools

Proficient in using Git and GitHub for version control, collaborative development, and code management. Comfortable working with development environments such as Visual Studio Code, Android Studio, and IntelliJ IDEA.

Ahmad Shajee

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PROFESSIONAL PROFILE

I am a software engineer with a strong passion for API design and integrations, clear and well-structured technical documentation, and modern web development. Experienced in building scalable, user-focused applications, connecting systems seamlessly, and ensuring reliable communication between services. Committed to writing clean, maintainable code and delivering efficient, high-quality software solutions that solve real-world problems.

EDUCATION

Bachelors in Software Engineering

School of Electrical Engineering & Computer Science SEECS , Islamabad , 2.63 (2026)

INTERNSHIP EXPERIENCE

Arrivy

03-Jun-2024 - 30-Aug-2024

Development of a marketing feature for on-platform advertisement. Chrome Extension development to sync gmail and Monday.com. PDF annotator feature. SRS Document for marketing feature and other Arrivy features.

FINAL YEAR PROJECT

Smart Parental Control System

The Final Year Project focuses on developing a web-based parental monitoring and control system designed to help parents ensure a safer online environment for children. The system provides real-time activity tracking, website categorization and restrictions, and intelligent content filtering to block harmful or inappropriate online material. Built using modern web technologies, the project emphasizes secure API-based communication, a user-friendly interface, and scalable backend services to deliver effective monitoring, reporting, and control features.

TECHNICAL EXPERTISE

Software Engineer

Software engineer with hands-on experience in building responsive frontends using React and dynamic backend services with Flask. Proficient in designing and integrating APIs to connect systems seamlessly, managing databases and writing clear Software Requirement Specifications (SRS) to guide development.

Ahsan Taimoor Ghazi

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PROFESSIONAL PROFILE

Agentic AI Engineer with 6 months of hands-on experience building AI systems, agent workflows, and computer vision models. I enjoy working on practical problems and creating systems that feel smooth, clean, and useful. I have completed MLOps practices, enabling me to deploy, automate, and manage end-to-end AI solutions effectively.

EDUCATION

Bachelor of Software Engineering

Seecs , Islamabad , 2.9 (2022)

INTERNSHIP EXPERIENCE

Conceptuals Academy

03-Nov-2025 - 19-Dec-2025

Developed an AI-powered chatbot for an academic organization offering O-Level and A-Level education, integrated with the existing Learning Management System (LMS). Designed the chatbot using a retrieval-augmented generation (RAG) approach to answer academic and course-related queries by grounding responses in institutional content. Implemented agent-based logic to manage query handling, information retrieval, and response generation workflows. Deployed the system using MLOps practices, focusing on reliable model serving, automation, and maintainability in a real-world educational environment.

FINAL YEAR PROJECT

Emotion Detection Based on Micro Expression

Micro-Expression Emotion Recognition using Vision Transformers Designing an emotion detection system based on facial micro-expressions using a Vision Transformer (MaeFace) architecture. Pretraining the model using self-supervised learning on macro-expression datasets to learn robust facial representations. Fine-tuning the pretrained model on micro-expression datasets including CASME II, CASME III, SMIC, and SAMM. Implementing knowledge distillation to transfer learned representations from a large MaeFace (teacher) model to a lightweight MobileViT (student) model. Optimizing the student model for real-time, low-latency inference on resource-constrained devices.

TECHNICAL EXPERTISE

Agentic AI

Design and develop agent-based AI systems capable of planning, tool usage, and multi-step reasoning. Build structured agent workflows to solve real-world tasks using modular, extensible architectures.

Retrieval-Augmented Generation (RAG)

Develop RAG pipelines for grounding LLM responses using external knowledge sources. Implement document ingestion, embedding generation, vector search, and response synthesis to improve accuracy and relevance.

Computer Vision

Build computer vision models for image and video analysis using deep learning techniques. Work with CNNs and Vision Transformers for tasks such as facial analysis, micro-expression recognition, and real-time inference.

Model Optimization & Deployment

Build computer vision models for image and video analysis using deep learning techniques. Work with CNNs and Vision

Transformers for tasks such as facial analysis, micro-expression recognition, and real-time inference.

MLOps

Implement end-to-end MLOps workflows including model versioning, experiment tracking, automated training pipelines, and deployment. Ensure reproducibility, scalability, and maintainability of machine learning systems.

Ahmed Sultan

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PROFESSIONAL PROFILE

Aspiring AI Engineer and final-year Software Engineering student focused on Deep Learning and Medical Imaging . specialized in developing "Expert-in-the-Loop" diagnostic workflows, including an ongoing project on MRI tumor segmentation that utilizes Elastic Weight Consolidation to prevent model degradation. Technical proficiency includes Python, PyTorch, and MONAI, backed by practical experience in deploying scalable web solutions using React and Node.js.

EDUCATION

Bachelors of Software Engineering

School of Electrical Engineering and Computer Science , Islamabad , 3.27 (2026)

INTERNSHIP EXPERIENCE

01

19-Jun-2025 - 05-Aug-2026

-Worked on full-stack development for restaurant technology solutions serving clients in the MENA region, Spain, and the UK. - Implemented features such as CSV data export and role-based access control (RBAC). - Debugged and optimized existing codebases using React, Node.js/Express, and PostgreSQL. - Collaborated in agile sprints, participating in stand-ups, code reviews, and demos. - Gained hands-on experience with real-world software delivery and client-focused development.

FINAL YEAR PROJECT

An Expert-Guided Multimodal AI Ecosystem for Diagnostic Intelligence

Architectural Design: Developing an end-to-end medical diagnostic platform designed to overcome the rigidity of standard AI. Utilized the MoME+ architecture and PyTorch/MONAI to handle multi-modal MRI data, implementing Continual Learning strategies (Elastic Weight Consolidation, Replay Memory) to adapt to new tumor types (BraTS 2024 GLI & MEN) without catastrophic forgetting. Optimization & Performance: Engineering efficient training pipelines for 3D volumetric data (64^3 voxel crops), achieving high-fidelity segmentation (Dice Score: ~0.82) while optimizing resource allocation for mid-tier hardware constraints. Generative AI Integration: Building a "Safety-First" automated reporting pipeline that fine-tunes Large Language Models to generate radiological text. Implemented a strict JSON-to-Text grounding mechanism to ensure reports are evidence-based and free from hallucinations. Interpretability & Trust: Integrated Explainable AI (XAI) techniques utilizing Grad-CAM to visualize model attention maps, transforming "black box" deep learning decisions into clinically interpretable insights for radiologists. Full-Stack Deployment: Delivering a clinician-centric web application using React.js, Django REST, and Docker. The platform integrates the segmentation engine, metric extraction, and visual dashboard into a unified, deployable workflow on Google Cloud.

TECHNICAL EXPERTISE

Python Programming & Ecosystem

Proficient in leveraging Python for complex deep learning pipelines (PyTorch) and high-performance backend systems (FastAPI), integrating libraries like MONAI

Generative AI & Deep Learning

Experienced in implementing LLMs (MedAlpaca), developing structured-data-to-text pipelines to minimize hallucinations, and applying continual learning techniques like Elastic Weight Consolidation (EWC).

Data Structures & Algorithms

Applied advanced indexing and retrieval algorithms to architect a scalable search engine, optimizing query performance to return results in under 0.5 seconds for large datasets.

Computer Vision & Medical Imaging

Specialized in medical image segmentation using U-Net and MoME+ architectures, conducting ablation studies to optimize Dice scores and handling missing MRI modalities on constrained hardware.

Maheen Akhtar Khan

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PROFESSIONAL PROFILE

I am a Software Engineer with a strong focus on backend and platform engineering, experienced in building, operating, and scaling production systems used by thousands of real users. Currently, I work as a Software Engineer at Pam, a voice AI platform serving over 5,000 users across 500+ US-based auto dealerships, where I contribute to the development of customer-facing dashboards, backend services, and AI-driven workflows that power critical business operations.

My technical background spans JavaScript, TypeScript, C++, SQL, and Python, with hands-on experience using modern frameworks and tools such as React, Next.js, Node.js, Express, AWS (Lambda, DynamoDB), MongoDB, Firebase, and cloud-based deployment platforms. I regularly work across the full stack, with a particular emphasis on backend logic, system reliability, and building flexible, configuration-driven features that support evolving product requirements. I am comfortable owning features from requirements through deployment, while also supporting live systems by debugging issues, improving existing functionality, and collaborating closely with product and operations teams.

Alongside my industry experience, I have a strong interest in AI and LLM-powered systems. Through both professional and academic projects, I have worked with LLM integrations, prompt engineering, and task-specific model tuning to enhance automation, content generation, and user interactions. My Final Year Project, CyberShield, reflects this intersection of systems engineering and AI, combining a scalable web platform with simulated phishing, risk analysis, and AI-assisted components to address real-world cybersecurity challenges.

I am currently completing my Bachelor's degree in Software Engineering at NUST, where I have built a solid foundation in data structures, databases, cloud computing, and software design. I thrive in fast-paced, ambiguous environments, value clean and maintainable systems, and am motivated by building products that deliver measurable, real-world impact.

EDUCATION

BE Software Engineering (Bachelors in Software Engineering)

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

INTERNSHIP EXPERIENCE

PAM

01-Oct-2024 - 24-Jan-2026

• Developed, deployed, and maintained key features on the admin dashboard (website / dashboard), which serves over 5,000+ users and 500+ US-based auto dealerships. • Designed and implemented new platform features enabling dynamic configuration of system behavior, taking them from requirements through deployment to support more flexible workflows. • Collaborated with a cross-functional, asynchronous team, with a main focus on frontend development utilizing React/Next/TypeScript/Mantine UI/Chakra UI, and backend development utilizing Node/AWS DynamoDB/AWS Lambda/Retell AI • Engineered an internal tool to streamline the onboarding process, significantly reducing onboarding time by leveraging a React frontend and Node/AWS backend • Contributed to the support team by troubleshooting issues, refining existing features, and developing custom solutions to meet customer needs

HEADSTARTER AI

01-Jul-2024 - 01-Sep-2024

• Built 9 AI projects, with the goal of achieving a sizeable amount of active users on the final project • Collaborated with a team of 3 fellows, with a main focus on frontend development utilizing React/Next/TypeScript/Tailwind/Shadcn UI, and backend development utilizing Node/Firebase/Mongo/Prisma/PostgreSQL/GraphQL/Pinecone/AWS • Worked with fellows on API development & various APIs such as Gemini API/Groq API/LiveBlocks API/Scraper API/IBM Connect API

DPL
01-Jun-2024 - 15-Jun-2024

• Built a full-stack file management system (DataHub), overseen by a supervisor • Developed the project utilizing MongoDB/ExpressJS/React/NodeJS/Tailwind/TypeScript • Ensured secure file handling using AWS S3, and followed best practices from design to deployment • Learned modern deployment methods: Vercel/Heroku/MongoDB Atlas

FINAL YEAR PROJECT

CyberShield

CyberShield is a web-based cybersecurity awareness and incident reporting platform designed to address a growing gap in practical cybersecurity education, particularly within Pakistan's public and educational sectors. As phishing and social engineering attacks continue to rise - especially through channels like WhatsApp and voice calls - most existing solutions remain enterprise-focused, English-only, and limited to email-based threats. CyberShield was built to change that. The platform focuses on learning by doing, combining structured training with realistic, simulation-based experiences that help users recognize, resist, and report cyber threats in real-world scenarios. Users engage with interactive cybersecurity courses through a built-in Learning Management System (LMS), complete quizzes, earn certificates, and track their progress over time. To reinforce this learning, CyberShield simulates phishing attacks across email, WhatsApp, and voice, allowing users to safely experience and respond to common attack patterns. At the core of the platform is a unified risk analysis system that evaluates user behavior across training and simulations to generate actionable risk scores. These insights are paired with gamification elements - points, badges, and leaderboards - to encourage engagement and long-term retention. Administrators gain access to dashboards that visualize awareness levels, campaign effectiveness, and risk trends across organizations and user groups. CyberShield also integrates AI and LLM-powered components to enhance accuracy and scalability. Large language models are used for tasks such as dynamic content generation, phishing scenario analysis, quiz assistance, and conversational interactions, while voice simulations leverage modern speech and voice AI services. Built with a scalable, layered architecture and role-based access control, CyberShield supports multiple user roles, multilingual access (English and Urdu), and modular expansion. The platform aligns with global security education standards while remaining locally relevant - aiming not just to inform users, but to actively change behavior and improve digital resilience.

TECHNICAL EXPERTISE

Backend & Platform Engineering

Node.js, Express.js, RESTful API design, serverless architectures, AWS Lambda, DynamoDB, MongoDB Atlas, PostgreSQL, Prisma, Firebase Experience building scalable backend services, configuration-driven systems, and data models to support production workloads and evolving product requirements.

Frontend Engineering

React, Next.js, TypeScript, Tailwind CSS, Mantine UI, Chakra UI, Shadcn UI Strong experience building responsive dashboards, admin interfaces, and role-based UIs with a focus on usability, performance, and maintainability.

AI & LLM Integrations

LLM integrations, prompt engineering, AI-assisted workflows, Gemini API, Groq API, OpenRouter API, Pinecone, HuggingFace Hands-on experience integrating and orchestrating LLM-powered features such as chatbots, content generation, semantic search, and AI-assisted analysis within production systems.

Cloud & DevOps

AWS (Lambda, DynamoDB, S3), Vercel, Heroku, MongoDB Atlas Comfortable with deployment pipelines, cloud-based storage, serverless execution, and operating live systems in production environments.

Databases & Data Systems

MongoDB, PostgreSQL, DynamoDB, Firebase Designed schemas and access patterns for analytics dashboards, user campaign systems, and AI-driven applications.

tracking,

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PROFESSIONAL PROFILE

AI Product Manager with end to end ownership across product discovery, delivery, iteration, and scaling. Experienced in leading **5+ AI SaaS** products from concept to launch and growth, working closely with engineering, design, and business teams. Strong focus on understanding user problems through product research, user interviews, usage data, and competitive analysis, then translating insights into clear PRDs, user personas, and well scoped requirements.

Hands on experience creating **wireframes, mockups**, and interactive prototypes to validate ideas early, align stakeholders, and reduce delivery risk. Uses AI powered tools for sentiment analysis, feedback clustering, and behavioral analysis to strengthen the discovery phase and prioritize only high impact, necessary features that improve usability and user experience.

Actively conducts **AI assisted pre mortems** to surface early risks, edge cases, and hidden nuances before development begins. Skilled in prompt engineering and AI based research to accelerate insight generation, idea validation, and decision making. Balances business goals, technical feasibility, and user needs to build scalable, user centric, and AI enabled products that deliver measurable value.

EDUCATION

Bachelors of Software Engineering

SEECS , Islamabad , 2.93 (2026)

INTERNSHIP EXPERIENCE

Unify connect LTD (Hongkong)

13-Jun-2025 - 07-Aug-2025

Focused on the project discovery phase by conducting research, defining user personas, and translating insights into user stories. Led feature prioritization for the MVP and collaborated with R&D to define AI recommendation algorithm parameters and their relative weightage. Actively contributed as an AI Product Manager across design, development, and strategy.

FINAL YEAR PROJECT

Shalmi Mart (Digitizing Pakistan Largest Wholesale Market)

Shalmi Mart is a digital wholesale marketplace designed to digitize Shah Alam Bazaar, Lahore. It connects vendors and retailers through a single platform, enabling bulk purchasing, smart order aggregation, and just-in-time delivery to solve accessibility, logistics, and infrastructure challenges of the traditional wholesale market.

TECHNICAL EXPERTISE

AI Product Manager with Frontend & MVP Development Expertise

Proficient in React and React Native for responsive web and mobile apps, with hands-on experience in API integration, state management, and reusable components. Skilled in UI/UX, wireframing, and AI-driven MVP development, collaborating with teams for end-to-end delivery.

NUST SCHOOL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE (SEECS)

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