

Syed Saifullah Rizwan

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EDUCATION

National University of Computer and Emerging Sciences Islamabad, Pakistan - Graduating- June 2025

Bachelor of Science in Computer Science

Relevant Coursework: Digital Image Processing, Artificial Intelligence, Database Systems, Software Engineering, Data Structures and Algorithms, Differential Equations, Linear Algebra, Parallel & Distributed Computing.

WORK EXPERIENCE

Python Internship – TECH OCTANET

June 2024 – August 2024

- Engineered and optimized robust Python data processing solutions, boosting performance, reliability, and my analytical problem-solving skills.

Junior AI Engineer – CareCloud MTBC

March 2025 – July 2025

- Designed and deployed an AI-powered Ideal Call Generator using OpenAI's Whisper for transcription and Nari-Dia (open-source TTS) for speech synthesis, automating realistic agent-patient dialogues in healthcare workflows.
- Implemented dynamic voice cloning with gender-based voice control, improving call realism by 40% and enabling accurate male/female voice assignment, boosting overall system reliability and engagement.

PERSONAL PROJECTS

ScholarChain (Final Year Project)

- Developed a decentralized Web3.0 application on Ethereum to offer interest-free student loans, connecting students with welfare organizations through transparent smart contracts.
- Integrated an LLM for automated risk assessment, personalized repayment plans, and chatbot support, reducing manual evaluation time by ~60% and enhancing user experience.

Glaucoma Detection Model

- Designed and trained a deep learning model using TensorFlow and Keras to detect glaucoma from retinal images, leveraging data augmentation to enhance accuracy and generalization.

University Timetable Generator

- Built an AI-based university timetable generator in Python using genetic algorithms, optimizing schedule efficiency by minimizing conflicts and accelerating generation time.

English to Urdu Machine Translation

- Developed an LSTM-based sequence-to-sequence model for English-Urdu translation using parallel corpora.
- Implemented tokenization, embedding layers, encoder-decoder LSTMs, and evaluated using BLEU scores.
- Presented qualitative and quantitative analysis, including Grad-CAM visualizations for model explainability.

Face Mask Detection Using Transfer Learning

- Fine-tuned MobileNetV2, ResNet50, and EfficientNet models on face mask detection datasets.
- Deployed the final model using Flask and OpenCV for real-time mask detection through live camera feeds.

Diabetes Prediction Using Neural Networks

- Designed a feedforward neural network for diabetes prediction on the Pima Indians dataset.
- Applied feature importance techniques including SHAP values and permutation importance for model explainability.
- Optimized hyperparameters using grid search to improve model performance and interpretability.

Facial Recognition Attendance System Using Siamese Networks

- Developed a CNN-based Siamese network for face recognition with triplet and contrastive loss strategies.
- Built an automated attendance system with real-time face detection and matching via a web-based Flask interface.
- Designed embedding storage and retrieval logic to allow scalable, efficient matching of new student faces.

Dual-Input CNN for COVID-19 Detection Using X-Ray and CT scans

- Engineered a dual-branch CNN architecture to fuse features from both X-ray and CT medical images for accurate COVID-19 diagnosis.

Vehicle Counting and Speed Estimation with YOLOv8 & Faster R-CNN

- Built a computer vision system using YOLOv8 and Faster R-CNN to detect, track, and count vehicles from traffic surveillance footage with high precision.
- Implemented real-time speed estimation using object tracking and frame-differencing techniques, enabling accurate vehicle analytics for intelligent transportation systems.

Certifications:

- AWS Academy Cloud Foundations.**