

Muhammad Tabish

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EDUCATION

National University of Sciences and Technology (NUST)

Islamabad, Pakistan

Bachelor of Software Engineering

Sep. 2023 – Jun. 2027

- GPA: 3.17 / 4.00
- Relevant Coursework: Machine Learning, Data Structures & Algorithms, Database Systems, Software Design, Operating Systems, Cloud Computing, Computer Networks

EXPERIENCE

Machine Learning Research Intern

Jun. 2025 – Sep. 2025

Deep Learning Lab (TUKL) – National Center for AI

Islamabad, Pakistan

- Developed multimodal deep learning pipelines combining CNN-based facial analysis with raw speech processing for depression recognition.
- Preprocessed AVEC 2014 dataset including face cropping, alignment, frame extraction, and audio segmentation in Google Colab.
- Handled overfitting using dropout and early stopping; debugged GPU memory issues and training loops.
- Extracted audio from video datasets and implemented raw speech pipelines for multimodal fusion.
- Studied IEEE research papers and translated architectures into reproducible TensorFlow implementations.

PROJECTS

Multimodal Depression Analysis System | *Python, TensorFlow, CNNs, Signal Processing*

2025

- Built an end-to-end multimodal ML system for depression level prediction using facial videos and raw speech signals.
- Implemented CNN-based visual pipelines and audio models inspired by WavDepressionNet and attention networks.

Search Engine | *Python, C++, Flask*

2024

- Built a mini search engine for 197k+ Medium Articles supporting inverted indexing, TF-based ranking, and query parsing.
- Performed text preprocessing, lemmatization, and efficient query processing in C++.
- Integrated Flask REST APIs for frontend-backend communication.

Infectious Disease Spread Simulation | *Python, Network Analysis, Visualization*

2025

- Simulated disease spread in synthetic social networks using probabilistic infection models.
- Generated datasets and visualized network evolution while analyzing time and space complexity.

Lumo – Microservices Video Streaming Application | *Python, Flask, Microservices, Google Cloud*

2025

- Designed and deployed a microservices-based video streaming platform with separate services for authentication, media handling, and content delivery.
- Implemented REST APIs and modular service architecture following SDLC principles.
- Deployed the Project on Google Cloud using Docker and Kubernetes.

CERTIFICATIONS

Get Started with Cloud Storage Skill Badge — Google
The Basics of Google Cloud Compute — Google
Neural Networks and Deep Learning — DeepLearning.AI
Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning — DeepLearning.AI
Convolutional Neural Networks — DeepLearning.AI
Advanced Learning Algorithms — DeepLearning.AI
Supervised Machine Learning: Regression and Classification — DeepLearning.AI

TECHNICAL SKILLS

Languages: Python, C++, Java
Machine Learning: TensorFlow, CNNs, Multimodal Learning, Supervised Learning, Unsupervised Learning
Software Engineering: Agile, Git, OOP, REST APIs, Linux, Flask, Docker, Google Cloud
Databases: MySQL, Firebase, Supabase

EXTRACURRICULAR ACTIVITIES

Executive Member – ACM NUST
Executive Member – EFX NUST
Participant – Elevatech Coding Competition
MOC Hustle Hour – Entrepreneur Seminar