



# Muhammad Huzaifa Shahbaz

| **Nationality:** Pakistani **Gender:** Male | **Email address:** [mhuzaifadev@gmail.com](mailto:mhuzaifadev@gmail.com) |

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<https://mhuzaifa.com/portfolio> | **Address:** Karachi, Pakistan (Home)

## ● ABOUT MYSELF

Software Engineer specializing in Artificial Intelligence and Large Language Models (LLMs) with 3+ years of post graduate experience in building scalable backend systems. Proven track record in optimizing inference infrastructure and deploying production-grade ML pipelines. Seeking to deepen theoretical knowledge in Computer Science and Engineering through a Master's degree.

## ● EDUCATION & TRAINING

01/01/2019 - 14/03/2023 - KARACHI, PAKISTAN

**BS IN SOFTWARE ENGINEERING**- SIR SYED UNIVERSITY OF ENGINEERING & TECHNOLOGY

**Focus:** Artificial Intelligence & Software Engineering **CGPA:** 3.35 / 4.0

### Key Coursework:

- **Mathematics:** Linear Algebra, Probability & Statistics, Calculus, Discrete Math.
- **CS Core:** Data Structures, Algorithms, Operating Systems, Databases, Compiler Construction.
- **AI & Data:** Artificial Intelligence, Data Mining, Operations Research, Simulation.

### Research (Final Year Project):

- **Topic:** ML Pipeline for Breast Cancer Diagnosis (with Aga Khan University Hospital).
- **Result:** 92% Accuracy | **Grade:** 4.0/4.0 (Top of Batch / High Distinction).
- **Link:** [doi.org/10.6084/m9.figshare.22340170.v1](https://doi.org/10.6084/m9.figshare.22340170.v1)

Level in EQF: 6 | **Website:** [www.ssu.edu.pk](http://www.ssu.edu.pk)

## ● WORK EXPERIENCE

01/09/2024 - CURRENT - ST. PETERSBURG, FL, UNITED STATES

**AI BACKEND ENGINEER** SWIFT DYNAMICS, LLC

- **LLM Optimization:** Deployed quantized models (GPTQ/AWQ) on IoT hardware, reducing memory by 60% with 95% accuracy.
- **Scalable Systems:** Built 'PseudoCompiler' (FastAPI/AWS), a real-time WebSocket platform handling 50k+ concurrent users at <50ms latency.
- **DevOps Leadership:** Led backend team to adopt Docker/Kubernetes and automated workflows using RAG pipelines.

**Website:** [swiftynamics.io](http://swiftynamics.io)

01/07/2022 - 31/08/2024 - BOCA RATON, FL, UNITED STATES

**BACKEND ENGINEER** LENAAR DIGITAL, LLC

- **Multi-Agent Pipelines:** Architected complex video processing workflows integrating YOLOv8/v11, DeepSORT, and LLM agents. Achieved near-real-time throughput (20-25 FPS) via RabbitMQ message brokering.
- **Inference Cost Optimization:** Transitioned production workloads from closed-source APIs to self-hosted

Llama-3-70b instances. Optimized throughput using vLLM, reducing inference costs by approximately 8x.

- **System Refactoring:** Co-led the migration of a monolithic ERP system (used in Malaysia timber industry) to a microservices architecture, reducing deployment cycles by 40%.

Website: [lenaardigital.com](http://lenaardigital.com)

01/01/2022 - 30/06/2022 - KARACHI, PAKISTAN

## **MACHINE LEARNING ENGINEER AKDN DHRC (AGA KHAN UNIVERSITY HOSPITAL)**

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- **Biomedical ML Pipelines:** Developed machine learning pipelines for breast cancer diagnosis, achieving 92% model accuracy. The system assisted radiologists by reducing manual review time by ~87%.
- **Data Engineering:** Automated the preprocessing and semantic labeling of large-scale medical imaging datasets, standardizing data for research usage.
- **Statistical Analysis:** Performed Exploratory Data Analysis (EDA) to assess feature distributions and model bias. Conducted hyperparameter optimization using Optuna and Grid Search techniques.

Website: <https://the.akdn/en/home>

01/05/2020 - 31/10/2020 - SAN JOSE, CA, UNITED STATES

## **MACHINE LEARNING RESEARCHER VIRUFY**

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- **Audio Signal Processing:** Contributed to the development of AI models for detecting COVID-19 signatures in cough audio recordings.
- **Data Annotation:** Collaborated with a global team of researchers to crowdsource, clean, and annotate audio datasets for model training.

## ● **SKILLS**

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Artificial Intelligence | Machine Learning | Deep Learning | Computer Vision | Natural Language Processing | Neural Networks | Image Processing | Data Science | Programming Languages :HTML 5, CSS, JAVASCRIPT, JQUERY, JSON,Node.js, Python ,PHP, C# , VB.NET | Microservices, RESTful API, Backend development, GraphQL, RabbitMQ, Basic -Software Testing | Software Architecture: AUTOSAR, Software-Oriented | Databases (MongoDB MySql PostgresSql) | Cloud Computing (Google Cloud, AWS) | Virtualization | Linux | Project Management (Project Libre; MS Project) | Version Control (Git) | PyTorch | Pandas

## ● **PUBLICATIONS**

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### **The future of third web: a role of blockchain and Web 3.0** 2025

Usman Ali; Irfan Ali Kandhro; Raja Sohail Ahmed Larik; Abdullah Ayub Khan; Muhammad Huzaifa Shahbaz; Muhammad Osama International Journal of Electronic Security and Digital Forensics Vol. 17, No. 3, p 391-403.

### **Predicting the Karachi Stock Price index with an Enhanced multi-layered Sequential Stacked Long-Short-Term Memory Model**

Khalid Mahboob; Muhammad Huzaifa Shahbaz; Fayyaz Ali; Rohail Qamar VFAST Transactions on Software Engineering Vol. 11 No. 2 (2023): April-June .

### **Enhancing Contextualized GNNs for Multimodal Emotion Recognition: Improving Accuracy and Robustness**

Muhammad Huzaifa Shahbaz; Zain-Ul-Abidin; Khalid Mahboob; Fayyaz Ali IEEE 2023 7th International Multi-Topic ICT Conference (IMTIC)

### **Analyzing the Classification Performance of DenseNet121 on Pre-processed MIAS Dataset** 2023

Tauseef Mubeen; Zain-Ul-Abidin; Muhammad Huzaifa Shahbaz; Pablo Otero Roth; Miguel Angel Luque Nieto IEEE 2023 Global Conference on Wireless and Optical Technologies (GCWOT)

## ● **LANGUAGE SKILLS**

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Mother tongue(s): **URDU**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	B2	B2	C1

## ● VOLUNTEERING

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12/01/2020 - 31/03/2023 Karachi

**Student Ambassador - Microsoft** Evangelized cloud technologies (MS Azure, Dynamics 365, Microsoft Fabric/Power Bi) to build a thriving tech community, organizing hackathons and hands-on workshops that empowered peers to bridge the gap between theory and industry practice.

10/07/2019 - 30/06/2021 Karachi

**Lead - Google Developer Student Clubs** Co-established the campus chapter and piloted AI education, personally training 1,000+ students across 150+ high-impact workshops. Cultivated a dynamic peer-to-peer learning ecosystem to build real-world solutions.

## ● HONOURS AND AWARDS

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14/12/2023 Microsoft

**Awarded \$25,000 in Azure Credits** Awarded \$25,000 credits in MS Azure and other benefits for our startup Transpify Co. Ltd.

## ● CERTIFICATIONS

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11/09/2025 Google

**Google AI Essentials**

23/10/2024 Scrimba

**Frontend Developer Career Path**

14/01/2021 Microsoft

**Microsoft Certified AI Fundamentals**

27/12/2023 Microsoft

**Microsoft Certified Azure Fundamentals**

## ● PROJECTS

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**AI SQL Agent - Ask Your DB in your Language**

Links <https://www.mhuzaiifa.com/portfolio/sql-ai-agent>

**Staging Pro - Real-Time Race Control IoT Backend System**

Links <https://www.mhuzaiifa.com/portfolio/staging-pro>

**OptyAI for OptySleep**

Links <https://www.mhuzaiifa.com/portfolio/optysleep>

01/12/2025 - CURRENT

**Autonomous Flight Stabilization for Arduino Based Drone**