Mohammad Yehya Hayati

Email: mohammad7446@gmail.com
Portfolio: mohammadyehya.github.io
Mobile: +923352495576
Github: github.com/MohammadYehya

Education

- **National University of Computer & Emerging Sciences** — Karachi, Pakistan
  Bachelor of Science - Computer Science; GPA: 3.91 — *Aug 2021 - July 2025*

Skills Summary

- **Languages**: JavaScript, Typescript, C/C++, Python, SQL, Bash, Rust
- **Frameworks & Tools**: Scikit, TensorFlow, Keras, FastAPI, NextJS, TailwindCSS, NodeJS, Docker, PostgreSQL, Firebase, Neo4j, Postman, Selenium, Glade, Kafka, Redis
- **Platforms**: Linux, Web, Windows, Arduino, AWS, GCP, Azure, Vercel

(Full List on Portfolio)

Experience

- **Syslab.ai** — Onsite
  Research Intern — *Dec 2023 - Jun 2024*
  - **Generate Large Dataset**: Employed data augmentation (rotation, scaling, noise addition) and preprocessing techniques to expand and refine datasets, enhancing model robustness and accuracy for AI applications.
  - **Data Vizualization on WebApp**: Designed and implemented an intuitive dashboard using Next.js and TailwindCSS, allowing us to analyze trends, and evaluate model performance on the dataset mentioned above.
- **EyeconAI** — Onsite
  Full Stack ML Engineer — *Jul 2024 - Present*
  - **Production-Ready WebApp**: Designed and developed a full-stack web application using Next.js, Express.js, and FastAPI, integrating user authentication, API endpoints, and cloud deployment, making EyeconAI a scalable SaaS product.
  - **Context-Aware Models**: Built and fine-tuned machine learning models using TensorFlow and PyTorch, to enhance real-time adaptability to different environments.
- **Toyota Indus Motor Company** — Remote
  Full Stack ML Engineer - Collaboration — *Oct 2024 - Present*
  - **Detecting Vehicle Anomalies**: Developed a computer vision-based anomaly detection system using PyTorch and integrated it with a full-stack web dashboard (Next.js, FastAPI) for real-time monitoring of vehicle defects.
  - **Worker Sequence verification**: Engineered an AI-powered sequence verification system using action recognition models to ensure workers follow correct assembly steps, reducing errors and improving production quality.
  - **Impact**: The anomaly detection system minimized vehicle defect-related downtimes, reducing resource wastage and improving overall efficiency. Worker sequence verification ensured standardized manufacturing processes, leading to higher-quality vehicles and fewer post-production corrections, ultimately enhancing Toyota's productivity and cost-effectiveness.

Research Publications

- **Context-Aware Detection of Mixed Critical Events using Video Classification**: Developed a context-aware video classification system to detect mixed-criticality events in smart cities, enhancing automated surveillance. Improved event recognition for scenarios like traffic incidents and fires, optimizing public safety and response efficiency. Published on arxiv - arxiv.org/abs/2411.15773v1
- **ConData**: A context-aware multi-incidents dataset to support video classification research. Work in Progress paper to be published by Data in Brief.

Projects

- **Stock Price Predictor App**: An aplication that analyzes historical data from Yahoo Finance to forecast stock market trends. Using machine learning models like LSTMs and ARIMA, it predicts stock movements with high accuracy. Built with Next.js and TailwindCSS for the frontend and Django for the backend, it enables users to select companies and visualize trends with interactive charts.
- **LinguaLink**: An AI-powered chat platform that integrates real-time translation to enable seamless multilingual communication. Built with Next.js, Express.js, FastAPI, and TensorFlow, it uses Socket.io for real-time messaging and AI models for accurate translations.
- **CoinScope**: A real-time cryptocurrency wallet tracker that provides users with up-to-date portfolio insights. Built with Next.js and TailwindCSS for a sleek UI, it leverages Kafka for efficient data streaming, ensuring instant updates on asset values and transactions.
- **GridForge**: A game engine built with SDL2 and OpenGL, designed to streamline the development of isometric games. Developed in C++ with CMake for build management, it provides optimized rendering and efficient resource handling for smooth game performance.
- **Synq**: Synq is a real-time collaborative workspace that keeps teams and files perfectly in sync. It enables seamless folder sharing, document editing, and live collaboration with instant updates. Built with Next.js, TailwindCSS, ShadCN/UI, and Supabase, it leverages DrizzleORM for efficient database management, Socket.io for real-time communication, and Stripe for secure payments.

Honors and Awards

- Placed in Rector's List (4 SGPA) - Jan 2022, Jan 2023, May 2023
- Placed in Dean's List (3.5+ SGPA) - May 2022, Jan 2024, May 2024, Jan 2025
- First Place at Openhouse Database Project Competition - Dec 2024
- First Place at Procom Math Olympiad Competition - Apr 2023
- Runner's Up at Coder's Cup Speed Programming Competition - Nov, 2021