ALI TURAB

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EDUCATION

COMSATS University Islamabad   **Lahore**

Bachelors in Software Engineering   *Expected Graduation, June 2026*
- **CGPA:** 3.70

EXPERIENCE

NETSOL Technologies Pakistan   **Lahore**

AI/ML Intern   *July 2025 – August 2025*
- Developed a **Finance** App integrating **LSTM** and **RAG** architecture to help users manage, save and invest in stocks.
- Built and integrated a **React** with **Typescript** based frontend with a **FastAPI** backend.
- Implemented secure user authentication using **OAuth 2.0**, including **Google** Sign-In integration.
- Strengthened understanding of **algorithms** and iterative trial-and-error approaches to **optimize** model performance.
- Bridged **AI/M**L concepts with **Full-Stack** development, adapting quickly to project needs.

AIESEC in Pakistan   **Lahore**

Team Member (Business Development, Out-Going Volunteer)   *Sep 2023 - Sep 2024*
- Developed partnership agreements demonstrating strong **networking and stakeholder management** skills.
- Maintained global AIESEC relations, enhancing **cooperation and cross-cultural communication**.
- Applied **problem-solving, adaptability, and results-driven strategies** in community and business development.

PROJECTS

Shariah Law Assistant

Personal Project   *July 2025*
- Curated and preprocessed Quran, Hadith (6 authentic books), and Shariah texts into structured **datasets** for **multilingual embeddings**.
- Implemented a **RAG** pipeline using **LangChain**, **ChromaDB**, and **Gemini-1.5-Flash**, enabling context-aware Q&A in both Arabic and English.
- Deployed backend in FastAPI with a Streamlit UI, integrating multilingual embeddings (**paraphrase-multilingual-mpnet-base-v2**) to support Arabic queries.

FutureFinance

Internship Project   *July 2025 - August 2025*
- Implemented a **RAG** pipeline (**LangChain + OpenAI API**) for personalized saving strategies using curated synthetic data of 5,000+ local products.
- Built investment module by training an **LSTM** model on **10 years** of Vanguard S&P 500 ETF data, achieving a **Mean Squared Error of 5.13** for trend prediction.
- Created stock forecasting and insights using **linear regression + gradient descent**, and integrated live financial news and market updates via **APIs**.

Virtual Mouse

Personal Project   *August 2025*
- Developed a Hand-Tracking Virtual Mouse using **OpenCV**, **MediaPipe**, and **pynput**, enabling gesture-based system control.
- Implemented **gesture recognition** with index finger for cursor movement, index & middle tap for left click, thumb & index tap for right click, and palm movement for scrolling.
- Integrated **real-time hand tracking** with smooth cursor control, achieving low-latency interaction through MediaPipe's hand landmarks.
- Explored computer vision concepts by combining traditional image processing with ML-based gesture detection.

SK Sports

Freelance Project   *May 2025*

- Built a full-featured **e-commerce** platform using the **MERN** stack, customized to client requirements.
- Implemented cart management, guest checkout, order tracking, and secure **payment integration**.
- Developed an **admin dashboard** with **Redux Toolkit** for streamlined state management and operations.
- Enhanced UX with modern libraries, **EmailJS** for customer communication, and deployed on **Render** [here](#).

NavVision – Helping Visually Impaired People

Final Year Project   *July 2025 - Current*

- Exploring **YOLO** for object detection, **Digital Image Processing** for real-time analysis, and **Computer Vision** techniques toward developing an ML-based navigation assistant for the visually impaired.

SKILLS / TOOLS

- **Programming Languages**: Java, Springboot, C, C++, JavaScript, TypeScript, Python.
- **Frontend Development:** HTML, CSS, React.js, Next.js, Tailwind CSS, Bootstrap, Material UI, Framer Motion
- **Backend Development:** Node.js, Express.js, FastAPI, REST APIs
- **State Management:** Redux, Redux Toolkit.
- **Databases:** PostgreSQL, MongoDB, MS SQL Server.
- **AI/ML**: TensorFlow, PyTorch, LangChain, OpenAI, Hugging Face, OpenCV.
- **Tools:** GitHub, Docker, Streamlit, Stripe.