

# MUHAMMAD ALI

## Full-Stack Software Engineer

+92-328-4983021 • muhammadali5.dev@gmail.com  
linkedin.com/in/m-ali-swe • github.com/Muhammad-Ali-5 • m-ali-swe.vercel.app

### PROFESSIONAL SUMMARY

Full-Stack Software Engineer with expertise in scalable **Next.js**, **FastAPI**, and **MERN stack** architectures. Highly proficient in relational database modeling, enterprise-grade authentication (**Stateful JWT**, **RBAC**), and integrating Multi-Agent AI systems using **LangGraph**. Maintaining a **3.94 CGPA** at Lahore Garrison University, with a strong focus on building secure, production-ready applications.

### EDUCATION

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|-----------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>B.S. in Computer Science</b><br>Lahore Garrison University (LGU) (7th Semester), CGPA 3.94 / 4.0 | <b>03/2023 - Present</b><br>Lahore, Pakistan |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------|

### TECHNICAL SKILLS

**Frontend** | Next.js, React, TypeScript, Tailwind CSS, Zustand, TanStack Query, Shadcn/UI  
**Backend** | FastAPI (Python), Node.js, Express (MERN), SQLAlchemy, Pydantic, RESTful APIs  
**Databases** | PostgreSQL, MySQL, MongoDB, Relational Data Modeling  
**AI & Orchestration** | LangGraph, LangChain, Multi-Agent Systems, OpenAI/Gemini SDKs  
**Architecture & Security** | Stateful JWT Authentication, Role-Based Access Control (RBAC), Cross-Domain Cookie Security, Refresh Token Rotation, Modular Monoliths  
**DevOps & Tools** | Git, GitHub, Docker, Linux

### PROJECTS

**UniFlow V2 | Enterprise Campus Super-App** | (Next.js, FastAPI, PostgreSQL, LangGraph)  
<https://uniflow-systems.vercel.app>

- Architected a full-stack university management system featuring 7 specialized subsystems including Academic Scheduling, OPAC Library, and Cafe POS.
- Implemented a highly secure, Stateful JWT authentication system with Refresh Token Rotation, Cross-Domain Cookie visibility, and strict Role-Based Access Control (RBAC).
- Developed a dynamic Academic Timetable Engine utilizing Cartesian overlap algorithms to detect scheduling clashes.
- Integrated a Multi-Agent AI Orchestrator using LangGraph to process natural language requests (e.g., ordering food, checking schedules) and stream Generative UI widgets directly to the frontend.
- Designed a heavily normalized PostgreSQL database schema using SQLAlchemy, handling complex relationships for financial ledgers, inventory, and user profiles.

**Multimodal AI Chatbot** | (Next.js, OpenAI/Gemini APIs)

- Engineered a responsive, multimodal conversational interface capable of processing and reasoning over both text and image based user inputs.
- Architected the backend to securely manage dialog state in PostgreSQL while orchestrating external LLM provider calls with low latency.

**Personal Developer Portfolio (Next.js, Tailwind CSS)**

- Developed a highly optimized, responsive portfolio utilizing modern Next.js server-side rendering to showcase technical architectures and projects.

### CERTIFICATIONS: PIAIC (PRESIDENTIAL INITIATIVE FOR ARTIFICIAL INTELLIGENCE & COMPUTING)

- Agentic AI Professional Level 2 Developer
- Model Context Protocol (MCP) Level 2 Developer