

# Muhammad Aleem Azhar

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## PROFILE

Software Engineer new grad (CS '26) focused on **back end and full stack systems**. Builds production **APIs and services** with **Python, FastAPI, Node.js, PostgreSQL, Redis, Docker, CI/CD**. Strong in **data modeling, authentication, logging, testing, and reliability**; ships features end to end with measurable gains in **latency and uptime**.

## EDUCATION

### Rhodes College

Memphis, TN

B.S. in Computer Science; Minor in Statistics

May 2026

- Selected coursework: **Data Structures and Algorithms, Operating Systems, Databases, Software Engineering, Probability and Statistics, Machine Learning**
- **Yonsei University (Seoul)** — Study Abroad in AI and Computer Vision (Fall 2024)

## EXPERIENCE

### Teaching Assistant, Fundamentals of Computer Science

Jun 2025 – Aug 2025

Johns Hopkins University, CTY

- Designed labs on recursion, loops, and data structures; improved comprehension **40%** across **two campuses**
- Standardized materials and logistics; boosted delivery efficiency **30%** for **60+ students**
- Introduced **unit testing modules** and structured code reviews; lifted code quality and consistency

### Data Manager and Administrative Support (Intern)

Jan 2023 – Present

Rhodes Student Employment

Memphis, TN

- Automated **payroll and job listings** in Python; cut processing time **30%** with validation scripts
- Built a **feedback pipeline**; improved satisfaction **25%** and event participation **20%**
- Wrote internal docs and **CLI helpers** that shortened onboarding and reduced errors

### RHOK-SAT CubeSat Research Intern

May 2023 – Jul 2023

Rhodes College

Memphis, TN

- Developed **Python logging service** with **99.9% uptime** and Dash telemetry tool; sped analysis **40%**
- Implemented **TLE and GPredict pass prediction** with about **95% accuracy**; parsed radio logs
- Hardened **app permissions and flows**; improved operator usability **15%**

## PROJECTS

### Teacher Evaluation System

May 2025 – Present

*Next.js 14, TypeScript, FastAPI, Prisma, PostgreSQL, NextAuth, Tailwind, Docker*

- Built **rubric-based observations** with real-time scoring and **role-based access control**; JWT sessions via NextAuth
- Normalized **PostgreSQL schema** and Prisma migrations; API routes for **6 domains / 24 criteria** with validation and security headers
- Containerized services; **CI/CD with GitHub Actions** for lint, test, build, and deploy

### City Pulse — Real-Time City Analytics

Apr 2025 – Aug 2025

*Python, FastAPI, PostgreSQL + TimescaleDB, Redis, Next.js, Mapbox, Docker*

- Exposed **10+ REST endpoints** for zone stats, alerts, and forecasts; achieved **sub-second median latency** with Redis caching
- Used **TimescaleDB hypertables** for time series; added structured logging, unit tests, and OpenAPI docs
- Delivered **Next.js dashboard** on Mapbox; **Docker Compose dev stack** for reproducible setup

### AI Social Mirror

May 2025 – Present

*FastAPI, Node.js, Next.js, Stripe, logging and monitoring*

- Production **API with rate limits, retries, and error handling**; maintained **99.9% uptime** with latency dashboards
- Implemented **subscription billing with Stripe**; improved conversion **25%**
- Added **API keys, RBAC, and request sampling** for faster debugging and secure access

## SKILLS

**Languages:** Python, TypeScript/JavaScript, Java, C, SQL

**Back end:** FastAPI, Node.js, REST, webhooks, auth (JWT, NextAuth), RBAC, validation, OpenAPI

**Data:** PostgreSQL, TimescaleDB, Redis, Prisma, SQL modeling and queries

**Front end:** React/Next.js, TypeScript, Tailwind, Mapbox

**DevOps and Quality:** Git/GitHub, Docker, CI/CD, Linux, Vercel, logging/dashboards, unit testing, linters/formatters