

# Adnan Mazharuddin Shaikh

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## EDUCATION

**University of Southern California** | GPA: 3.6/4

Aug 2024-May 2026(expected)

Master of Science in Computer Science

- Coursework: Algorithms, Database Systems, Operating Systems, Advanced Computer Communications, Security Systems.

## EXPERIENCE

### Full Stack Engineer

USC Facilities Planning & Management | **Project**

Aug 2025-Present

Los Angeles, CA

- Containerized scalable React and Flask web application using Docker for 1.1k+ users, improving development efficiency by 20%.
- Optimized CI/CD pipelines using GitHub Actions, GCP, and CyberArk SSH automation, reducing deployment time by 40%.

### Software Development Engineer Intern

Sigma Healthsense | **Project**

May 2025-Aug 2025

Marina del Rey, CA

- Developed a parking system using YOLO object detection achieving 95% accuracy on 2k+ parking spots across 10 LA locations.
- Deployed Next.js, FastAPI, and MongoDB on Google Cloud Platform, supporting 1.2k concurrent users with 99.9%+ uptime.
- Integrated Reolink IP cameras with RTSP streaming through NVR for real-time live feed embedding, utilizing RESTful APIs.
- Implemented secure IAM roles on GCP and service-to-service authentication with proper access controls across microservices.

### Software Development Engineer | *Spotlight Recognition for exemplary performance*

Persistent Systems | **Project**

Jun 2022-Jul 2024

Pune, India

- Scaled a React.js/.NET app that cut administrative claims paperwork in half and improved load times by 30% for 1M+ users.
- Migrated 2 million production data rows, cutting MSSQL query times from 2 minutes to 8 seconds and saving \$1.7M annually.
- Built a predictive model that identified high-risk users 6 months early, enabling 15% decrease in preventable insurance claims.
- Engineered a gamified health platform with streaks and leaderboards, driving 50% higher engagement across 20+ partner firms.

## OPEN-SOURCE CONTRIBUTIONS

### DiceDB (distributed in-memory database) | **Project**

Dec 2024-May 2025

- Enhanced DiceDB's "iothread.go" by ensuring client identifiers and watcher notifications update only on successful execution.
- Merged PR [#1680](#) improved error handling, prevented inconsistent state propagation, and strengthened system stability.

## PROJECTS

### Build Your Own X | **Project**

Aug 2024-Present

- Architected a robust HTTP/1.1 server, DNS resolver, and Redis-like datastore in Java, applying core systems design principles.
- Built TCP/UDP networking with socket programming, concurrent thread-pool handling, protocol parsing & file I/O operations.

### WeenixOS Kernel | **Project** | *Part of the CSCI 402 Operating Systems course*

Jan 2025-May 2025

- Developed a Linux kernel in C with process scheduling, virtualization, system calls, and memory management for x86\_32 QEMU.
- Demonstrated low-level systems programming via multithreading, S5FS/RAMFS, and stress-testing with 10K+ task switches.

### DuckDB: Learned Indexing | **Project** | *Part of the CSCI 550 Advanced Data Stores course*

Jan 2025-May 2025

- Extended ALEX with polynomial regression, achieving 1.5x lookup throughput improvement over linear models (500k records).
- Designed custom OLAP indexing in CPP/CLion with fast cost sampling and bulk loading optimizations, outperforming ART.

### Machine Learning to Predict Fake Product Reviews on Amazon | **Project**

Jan 2021-Mar 2022

- Implemented reinforcement learning model with product-centric feature engineering for classification, ranking 2nd in CS dept.
- Launched a Chrome extension in HTML/CSS/JS that scraped Amazon.com using Scrapy, Flask and CassandraDB as backend.

## SKILLS

**Languages/DBs:** JavaScript, TypeScript, Python, C, C++, C#, Java, Dart, Go, Bash, SQL, Aurora, PostgreSQL, DynamoDB.

**Web/App Development:** Node.js, Next.js, REST, SOAP, Redux, GraphQL, FastAPI, Spring Boot, Langchain, Qdrant, Firebase.

**Networking/Security:** IP, BGP, WebSockets, gRPC, Kafka, RabbitMQ, QUIC, WebRTC, Nginx, Wireshark, iptables, TLS/SSL.

**Cloud/DevOps:** IAM, AWS(S3, EC2, Lambda), Azure, GCP, Grafana, Prometheus, Git, Docker, Kubernetes, Terraform, Jenkins.

**AI/ML:** TensorFlow & Keras, PyTorch, Scikit-learn, Numpy, Scipy, Pandas, Matplotlib, Pillow, OpenCV, Jupyter, spaCy, NLTK.

## LEADERSHIP & ACHIEVEMENTS

### Graduate Teaching Assistant

USC Viterbi School of Engineering

Aug 2025-Present

Los Angeles, CA

- TA for CSCI 491 Advanced Game Project at USC Games, guiding peers in Unity, Git LFS, and VCS under Prof. Scott Easley.

### Certifications

Amazon Web Services | Microsoft | Coursera

Jun 2020-Present

Remote

- [AWS Cloud Practitioner](#) | [Azure Fundamentals](#) | [Open Source Development/Linux/Git](#) | [Java OOP](#) | [Python for Everybody](#)