Adnan Mazharuddin Shaikh

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EDUCATION

University of Southern California | GPA: 3.6/4   **Aug 2024-May 2026**

Master of Science in Computer Science

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

Walchand Institute of Technology | GPA: 9.8/10   **Oct 2018-Mar 2022**

Bachelor of Technology in Computer Science and Engineering

- Varsity Football, 2018 – 22; awarded "Most Valuable Player" for 2019 – 20 seasons.

EXPERIENCE

Graduate Teaching Assistant   **Aug 2025-Present**
USC Viterbi School of Engineering   **Los Angeles, CA**

- Mentored 58 peers in Unreal, Blender, Photon, Git LFS, and VCS for CSCI 491 Advanced Game Project Fall '25 at USC Games.
- Collaborated with Prof. Scott Easley on game development using Unity 6.2, Unity Hub v3, Assembla SVN, Swift, and Xcode.

Full Stack Engineer   **May 2025-Sep 2025**
USC Facilities Planning & Management | **Project**   **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 21.7%.

Software Development Engineer Intern   **May 2025-Aug 2025**
Sigma Healthsense | **Project**   **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   **Jun 2022-Jul 2024**
Persistent Systems | **Project**   **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 by 1.5x.

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   **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   **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: C, C++, C#, Java, Python, JavaScript, TypeScript, Go, Bash, SQL, Redis, DynamoDB, PostgreSQL, Aurora.
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.
Tools: Vim, GNU Emacs, GDB, CMake, WebAssembly, Jira, Bitbucket, Slack, Selenium, Chrome DevTools, Visual Studio Code.