Azaan Khalfe

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Education

Bachelor of Science in Computer Science - University of Washington June 2024

Relevant Coursework:
Distributed Systems, Data Centers, Algorithms, Data Structures, Software Engineering, Systems Programming, Web Browser Engineering, Security, Databases, Operating Systems

Experience

Research Assistant | Paul G. Allen School Jan 2022 – June 2024

- Collaborating with a team of 7 faculty/students on Project Sidewalk to develop methods of collecting crowdsourced accessibility data using Google StreetView and Google Maps API
- Engineered and designed a database system in PostgreSQL to decrease query latency by 87%
- Developed a back-end architecture using Go, PostgreSQL, and Docker by deploying 3 Docker images onto a Kubernetes cluster
- Established safe networking across the backend and database service with 8+ pods and 2 PVC
- Enhanced Kubernetes documentation with practical example commands and integrated it with Google's official documentation for streamlined access and user guidance

Teaching Assistant | University of Washington April 2024 – June 2024

- Teaching Assistant for Introduction to Web Browser Engineering
- Led weekly quiz sections for 24+ students by creating relevant slides and worksheets
- Held weekly office hours to answer conceptual and homework-related questions in addition to grading assignments and exams

Vice President | Muslims of Allen Sept 2023 – June 2024

- Led weekly meetings to set goals, discuss progress, and gather member input
- Collaborated with Allen board to host a community dinner for 60+ students
- Organized social events that expanded the club's reach and strengthened connections
- Secured speakers from Apple, Google, and Microsoft for a successful career event

Projects

Distributed Systems Paxos Consensus Algorithm

- Designed and implemented a fault-tolerant distributed system using the Paxos consensus algorithm, ensuring consistency and replication across multiple nodes
- Developed code in Java to handle each phase of the algorithm and implemented communication protocols for nodes to reach a consensus
- Authored a comprehensive design document detailing the Paxos consensus algorithm, encompassing all associated states and high-level information to guide system-wide integration and optimization

NFL Fantasy Picker

- Developed a real-time Full Stack application using React and Node.js, dynamically predicting the top ten starting players and updating scores based on real-time data.
- Constructed and maintained an SQL database housing comprehensive data on 50 NFL players, ensuring timely score updates and data integrity.

University of Washington Registration System

- Worked closely with 5 other peers to design and implement the system with each person having their own role
- Lead the design and implementation of the backend creating the SQLite database in javascript
- Improved Registration by creating a wait list system and creating a swapping between students
- Created a system that shows Professors rating and difficulty of the course
- Implemented tests for the backend and created YAML file to automate the tests with GitHub Actions using CI/CD so the tests

Technologies and Languages

- Python, Java, Go, JavaScript, C, SQL, HTML
- Git, GCP, Kubernetes, Docker, NPM, Unix, PostgreSQL., JDBC, Maven, YAML, AWS