Azaan Khalfe

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Education

University of Washington Seattle, WA

Bachelor of Science in Computer Science *June 2024*

- **Relevant Coursework:** Distributed Systems, Algorithms, Data Structures, Software Engineering, Systems Programming, Databases, Operating Systems

Experience

Software Engineer Intern — Contractor October 2024 – January 2025

Microsoft *Redmond, WA*

- Architected enterprise-grade Azure Function Apps using C#/.NET with asynchronous message processing, achieving 90%+ code coverage
- Developed RESTful APIs and telemetry systems leveraging Application Insights for monitoring and performance optimization
- Engineered secure authentication through Azure Managed Identities and implemented dependency injection patterns

Teaching Assistant April 2024 – June 2024

University of Washington *Seattle, WA*

- Instructed 24+ students weekly on web architecture and browser engineering concepts; created 8+ technical learning materials
- Evaluated 200+ assignments focusing on code quality and architectural design, maintaining 95% student satisfaction rate

Projects

DevEnv MCP Server | *Python, FastMCP, asyncio, Pydantic, psutil, Docker*

- Architected Model Context Protocol server enabling AI assistants to manage local development environments with 12 tools for Docker orchestration, virtual environments, process monitoring, and system health
- Optimized concurrent operations using asyncio.gather for parallel subprocess execution, reducing virtual environment discovery latency from 5.1s to 1.2s (4.2x speedup)
- Designed structured Pydantic response schemas for AI-parseable outputs with cross-platform abstractions (Windows/macOS/Linux) using psutil for process and system resource inspection
- Built comprehensive test suite with 80+ unit tests and implemented safety patterns using confirmation dialogs for destructive operations

NFL Fantasy Picker | *React, Python, Flask, PostgreSQL, TimescaleDB*

- Architected multi-source data pipeline with automatic fallback orchestration (Sleeper API → ESPN API → web scraping), processing 10,000+ player-week statistical records with rate limiting
- Trained position-specific XGBoost models achieving 2.9 MAE with confidence intervals, using 22 engineered features including rolling averages, efficiency metrics, and trend indicators
- Designed PostgreSQL + TimescaleDB schema for time-series statistics, enabling efficient rolling window queries across 17 weeks × 3 seasons of historical data

Distributed Systems Paxos Consensus Algorithm | *Java*

- Implemented fault-tolerant distributed system using Paxos consensus algorithm, ensuring consensus across 12+ nodes under network partition scenarios with communication protocols handling 1000+ messages/second

Technical Skills

Languages: Python, Java, Go, JavaScript, C++, C#, SQL, HTML/CSS
Frameworks: React, Node.js, Flask, FastAPI, .NET, JUnit
Cloud/DevOps: AWS, Azure, GCP, Docker, Kubernetes, Git, CI/CD
Databases/Tools: PostgreSQL, Redis, MongoDB, Ollama, Prometheus, Grafana