

# ALEX LI

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## TECHNICAL SKILLS

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- **Programming Languages:** Python, C/C++, SQL, Java, JavaScript, SystemVerilog, HTML/CSS
- **Frameworks/Libraries:** Flask, Spring Boot, Express, React, Next, PyTorch, NumPy, pandas
- **Tools & Platforms:** Linux, Git, Make, PostgreSQL, Terraform, Docker, FPGAs, ModelSim, AWS, gprof, gRPC

## EDUCATION

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**University of Washington**, Seattle, WA  
B.S., Computer Science

Expected June 2027  
GPA: 3.7

**Relevant Coursework:** Discrete Mathematics, Linear Algebra, Data Structures and Parallelism, Hardware/Software Interface, Systems Programming, Digital Circuit Design, Machine Learning, Distributed Systems, Data Management, Datacenter Systems, Computer Architecture

**Awards:** **Best Use of AI + Best Finance/Data Analytics Project** (HackTech 2025), **1st Place** DubHacks 2023 (Synergy Track), **Futureforce Selectee** (Salesforce Data Cloud), Dean's List (2023–25)

## RELEVANT EXPERIENCE

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### Oracle

June 2026 - September 2026

*Incoming Software Engineering Intern - AI & Data Engines*

### Rubrik

January 2026 – May 2026

*Incoming Software Engineering Intern*

**Chewy** | *Spring Boot, Terraform, AWS, Mockito, Guice*  
*Software Engineering Intern*

June 2025 – August 2025

- Built and deployed **backend microservices** powering Chewy Ads reporting platform, replacing a 3rd-party scheduler with an **in-house job orchestration system** using AWS Lambda, SQS, and DynamoDB.
- Designed and implemented **retry-safe distributed workflows** with exponential backoff, DLQs, and SHA-256 deduplication, eliminating the need for expensive, brittle pull-based updates.
- Delivered production-ready **APIs and infrastructure** for scalable, idempotent report generation and delivery integrated with S3 storage and internal analytics services.

**UW Sensor Systems Lab** | *FPGAs, Verilog, GTKWave, Python, Serial Interfaces*  
*Undergraduate Research Assistant*

December 2024 – June 2025

- Developed **low-level FPGA drivers** and replaced I<sup>2</sup>C with a custom high-throughput UART protocol, increasing signal-pipeline bandwidth for acoustic levitation control.
- Implemented **real-time synchronization** logic across 100+ ultrasonic transducers for deterministic phase-angle coordination in object manipulation experiments.

## PROJECTS

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**Othello Game Engine** | *C++23, Multithreading, Profiling, gRPC, Docker*

[GitHub](#)

- Engineered a high-performance **parallel game engine** using iterative-deepening  $\alpha$ - $\beta$  search with principal variation search (PVS) and Zobrist-hashed transposition tables.
- **Optimized multithreaded throughput** to 18.5M nodes/s by sharding the transposition table per thread and eliminating STL overhead in the move-generation hot path.
- Exposed engine functionality through a **gRPC microservice API** supporting real-time remote play and orchestration; containerized with Docker for reproducible deployment.

**Distributed Key-Value Store (Multi-Paxos, Sharded)** | *Java, Multi-Paxos, Sharding*

- Designed and implemented a **fault-tolerant distributed key-value store** with leader election, replication, and dynamic shard rebalancing using the Multi-Paxos consensus algorithm.
- Built consensus-driven reconfiguration logic ensuring **linearizable consistency** under network partitions and crash faults; validated with adversarial distributed tests.
- Documented complete system architecture and failure-handling semantics for debugging and benchmarking under simulated node failures.