Jaden Sutton

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Work Experience

Amazon Web Services — Vancouver, BC
Software Development Engineer Intern — May 2024 - Aug 2024

- Developed a hot/cold dual storage system in Java/Kotlin to routinely offload stale DNS propagation metadata from a ledger database to DynamoDB, greatly expanding the storage capacity of an internal Route53 service while also reducing database storage costs by approximately **$5 million** per year
- Designed and implemented a distributed locking mechanism utilizing AWS QLDB, allowing the process of transferring data to cold storage to be parallelized across multiple hosts, increasing throughput by **6x**

Amazon Web Services — Vancouver, BC
Software Development Engineer Intern — May 2023 - Aug 2023

- Worked within the AWS Route53 organization to design and implement an incremental checksum system in Java, used to guarantee data consistency for a proprietary DNS file type across **1000+** AWS hosts. Reduced checksum reporting latency from **45+ minutes to <1 second** in contrast to the legacy checksum system
- Utilized Java thread pools to implement parallel checksum reporting into the existing reporting application, allowing both new and legacy checksum values to be reported
- Developed a mechanism based on bit manipulation to support backward compatibility between different checksum versions, allowing for a gradual rollout to production

Education

Carleton University — Ottawa, ON
Bachelor of Engineering - Software Engineering — May 2025

- Cumulative GPA: 3.8/4.0
- Extracurriculars: Carleton Competitive Programming Club
- Relevant Coursework: Operating Systems, Data Structures & Algorithms, Advanced C++, Real-time Concurrent Systems, Networks, Computer Architecture, Databases, Object-Oriented Development, Machine Learning

Project Portfolio (GitHub: jadensutton)

C++ Limit Orderbook Trading Simulator — GitHub Repo

- Developed a multi-threaded server-client orderbook simulator in C++ that allows client processes to submit buy/sell orders to a centralized server, which then performs order matching and execution using a FIFO algorithm
- Utilized Linux shared memory to minimize latency due to IPC, resulting in a mean order handling time of 9us

Machine Learning-Based Network Intrusion Detection System (Undergraduate Capstone Project)

- Collaborated in a team to design and implement an ML-based network intrusion detection system
- Led the development of a multi-threaded Python service to sniff raw packet data and preprocess it into structured traffic flow metrics for model input, facilitating real-time detection of potential attacks

Black-Scholes Options Analytics Tool — Live Website | GitHub Repo

- Developed a web application, using React and Flask, that uses the Black-Scholes model to price options contracts and generate a heatmap contrasting option value against underlying stock price/time-to-maturity
- Implemented the Black-Scholes model in Python, making use of numeric computing libraries such as NumPy

RISC Microprocessor

- Designed a RISC microprocessor using Logisim simulation software. Utilized simple logic gates to implement numerous components from scratch such as RAM, instruction registers, a control FSM and an ALU
- Wrote and executed a small string-manipulation program in Assembly to verify microprocessor functionality

Summary

- **Languages:** C++, Python, Java, JavaScript, SQL, HTML/CSS
- **Tools & Technologies:** Linux, React, AWS, Git, MySQL, Flask, UDP, TCP, REST, WebSocket, CI/CD