Edward Qin

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EDUCATION

University of Washington
Seattle, WA

Master of Science in Computer Science
Expected June 2025

- Coursework: Operating Systems, Natural Language Processing, Database Systems

Bachelor of Science in Computer Science
December 2023

- GPA: 3.92
- Coursework: Distributed Systems, Machine Learning, Cryptography, Security, Software Design, Databases

EXPERIENCE

Software Engineer Intern
June 2023 – September 2023

Snowflake
Bellevue, WA

- Improved production-level observability on user-defined functions (UDFs), providing UDF-level granular statistics on both Java and Python UDFs for internal use
- Designed and implemented both C++ stats gathering and propagation logic and incorporated stats visualization in front-end JavaScript infrastructure
- Gained valuable insights in industry-level development workflow and version control by writing design docs, implementing code and regression tests, and requesting code reviews

Undergraduate Teaching Assistant
September 2022 – Present

University of Washington
Seattle, WA

- Assisted in algorithms (1 quarter) and probability and statistics (4 quarters) computer science class, including leading weekly discussion section, holding office hours, and answering student questions on online discussion board
- Achieved proficiency in algorithms and problem-solving and communicated effectively to support students' learning

Computational Science Intern
July 2022 – September 2022

Pacific Northwest National Laboratory
Richland, WA

- Developed Python model measuring conductivity within Lithium Sulfur Sold-State Electrolyte Battery Cathodes, which will be used to provide insights on microstructure network analysis
- Wrote Python algorithm to generated pore networks and current distributions from conductivity calculations
- Ran 200,000 parallelized simulations to determine most energy efficient particle radius and volume fractions

Intern
September 2020 – September 2021

Goodwell Technologies
Bellevue, WA

- Advanced development cycle at e-commerce tech company by helping manage 35 company project boards, documenting internal processes, and generating monthly business reports
- Ensured front end quality for 30 developing sites by testing for Web Content Accessibility
- Reviewed security data by logging daily performance metrics and monitoring Alert Logic security threats

RESEARCH

Undergraduate Research
December 2022 – April 2023

University of Washington Systems Lab
Seattle, WA

- Researched Tensorflow XLA API for memory-efficient machine learning model serialization under PhD student
- Read machine learning systems papers to understand important concepts for machine learning inference on large devices such as parallelism and latency-throughput tradeoff
- Gained valuable research skills in testing and understanding code, reading papers, and participating in meetings

Projects

Battleship Simulation | *Java*   January 2022 – June 2022
- Initiated and defined console version of CPU and local Battleship game modes with small team
- Coded main board class and back end controller class that communicated between the model and view
- Implemented software design principles such as loose coupling and interfacing to allow for scalable code

Campus Map Pathfinding Application | *TypeScript, Java, ReactJS*   February 2022 – March 2022
- Built Java graph data structure and pathfinding algorithm from scratch to understand client and implementer roles
- Implemented ReactJS front end application using Leaflet API, developing research skills for learning new frameworks and front end design

Daily URL Opener Extension | *JavaScript*   March 2023
- Built simple Firefox extension to open urls daily at a user-defined time
- Learned about browser storage and extensions development

Distributed Key-Value Store | *Java*   September 2023 – December 2023
- Implemented course project for distributed key-value store that was linearizable, fault-tolerant, dynamically sharded, and supported multi-key cross-shard transactions
- Created design doc for each phase of the project and implemented 2-Phase Commit and MultiPaxos protocols

Japanese Art DCGAN | *Python, PyTorch*   February 2023 – March 2023
- Wrote and trained DCGAN to generate Japanese art for computer vision course final project
- Learned to collaborate on model training using Google Colab with model checkpoints saved on Google Drive

MiniJava Compiler | *Java, x86*   September 2023 – December 2023
- Coded course project that compiled Java code into x86 assembly code according to the MiniJava specification
- Fully implemented all compiler phases, from scanning and parsing to semantics checking and ASM code generation

Optimization Methods Summary   May 2023 – June 2023
- Wrote summary on 30 optimization methods for advanced machine learning course final project
- Provided visualization of history and categorization as pre-adaptive methods, adaptive methods, Adam variations, and newer other methods

Photo Filter App | *TypeScript, Java, Expo, React Native, Spark Java*   June 2022 – September 2022
- Created mobile app capable of filtering, transforming, and downloading images with Expo and React Native
- Built 8 fun filters from scratch using parallelized pixel-by-pixel manipulations of image data in Spark Java server
- Integrated 10 Expo and other open-source libraries in front end, and debugged using Expo Go

Mini Search Engine | *C/C++*   September 2022 – December 2022
- Coded course project that allowed ranked term search over online pages and local files
- Implemented doubly-linked list and hash-table data structures from scratch, local file indexing and searching, search file saving, and web app protocol in internet GUI
- Honed documentation analysis and version control skills through work with a large code base

Technical Skills

Languages: Java, Python, C/C++, SQL, x86, R, TypeScript, JavaScript, HTML/CSS
Frameworks: React, React Native, Spark Java
Developer Tools: Linux, Git, IntelliJ, CLion, PyCharm, Figma, Windows