

# Andrew(Zhaorui) Zhang

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## Summary

Current software engineer intern at a startup, Hugsy, with 2+ years of experience in backend/full-stack development, database management, and cloud technologies. Skilled in Java, Python, C, C++, SQL, JavaScript, and various frameworks & tools, with an eagerness to create efficient software that can benefit users and businesses.

## Education

### University of Washington

Sept. 2022 - Jun. 2024 (expected)

Master of Science in Electrical Engineering, **GPA: 3.90**

Seattle, WA

- Relevant Coursework: Algorithms and Computational Complexity, Data Structures and Algorithms, Computer Communication Networks, Database Systems, Systems Programming, Web Programming

### Shanghai Jiao Tong University

Sept. 2017 - Jun. 2021

Bachelor of Engineering in Electrical Engineering

Shanghai, China

## Skills

Programming      Java, Python, C, C++, SQL, JavaScript, HTML, CSS, Bash, Dart

Development Tools    Git, Node.js, Express.js, JDBC, Maven, FastAPI, Docker, Linux, Nginx, Flutter, OpenCV

Database & Cloud      SQLite, MySQL, PostgreSQL, Microsoft Azure

## Work Experience

### Hugsy

Oct. 2023 - Dec. 2023 (expected)

Software Engineer, Internship

Bellevue, WA

- Developed frontend using Flutter, backend APIs using Python Flask, and created MySQL connections for data management
- Integrated ChatGPT to provide gift recommendation by generating prompts based on user persona profiles

### BECU(Boeing Employees' Credit Union)

Feb. 2023 - May 2023

Software Engineer, Capstone Program

Seattle, WA

- Developed a sandbox application using Python FastAPI framework for securely testing malicious software and website
- Designed and implemented REST API endpoints to facilitate test requests submit, file upload, and analysis reports retrieval
- Integrated Cuckoo sandbox and VirtualBox to allocate virtual machines for testing submitted software, utilized tcpdump to capture network traffic, and stored analysis data in PostgreSQL database
- Achieved reverse proxy using Nginx, containerized the project with Docker, and deployed the application on Azure

## Projects

### Peer-to-peer File Sharing System

Jan. 2023 - Mar. 2023

Java, JDBC, MySQL, Maven

Seattle, WA

- Led a team to develop a multi-threaded P2P file sharing system using Java, and implemented functions including file retrieval, network topology, and global search for target files
- Designed a transport protocol on top of UDP that supports ARQ and content chunking which reduced response time by 40%
- Implemented a link-state routing protocol which can explore network from neighbors, construct a OSPF routing table to enhance transmission efficiency, and dynamically update nodes' reachability
- Designed a gossip protocol to perform distributed network-wide content search and store results in MySQL using JDBC

### E-commerce site for digital cameras and accessories

Mar. 2023 - Jun. 2023

Node.js, Express.js, SQL, HTML, CSS, JavaScript

Seattle, WA

- Developed a full-stack e-commerce website that supports product search, bulk purchasing, and user management
- Developed frontend using HTML, CSS, and JavaScript, and included Cookies & local storage to offer personalized services
- Designed and built backend APIs using Node.js and Express, integrated SQLite as database for storing product and user information, and enhanced security by passwords salted hashing and user permission controls

### Rapid Response Search Engine

Mar. 2023 - Jun. 2023

C, C++, GDB, CMake

Seattle, WA

- Developed modules that can efficiently crawl folder sub-tree, generate inverted indices, and stored index data in POSIX format
- Designed a query processor that can process multiple queries on multiple indices, and serve a ranked results list based on their correlation with the query words within 1 second
- Created a multi-threaded web server with a thread pool to handle concurrent client connections, and enhanced robustness by escaping cross-site scripting flaw and directory traversal attack