Tyler Le

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Education

University of California San Diego Sep. 2021 – Dec. 2023

Bachelor of Science in Computer Science

- GPA: 3.96/4.00
- Courses: Data Structures, Algorithms, Client/Server-Side Programming, Operating Systems, Network Security

Experience

Software Development Engineer Intern Jun. 2023 – Sep. 2023

Amazon *Seattle, WA*

- Researched, prototyped, and implemented the migration of a notification system for Alexa Smart-Home Device Discovery using **AWS (Lambda, DynamoDB, SQS, SNS)**, achieving a 7x reduction in compute traffic
- Engineered a mechanism for the Alexa Mobile app using the **Spring framework**, allowing it to query a device-detection service for data and generate card notifications, leading to a 15% boost in device setup engagement
- Performed unit and integration tests using the **Mockito framework** to test implementation and maintain 85% code coverage
- Established a **CI/CD pipeline** for automated building, testing, and deployment of a service used by 1M+ customers

Instructional Assistant Sep. 2022 – Mar. 2023

UC San Diego Computer Science and Engineering Department *La Jolla, CA*

- Tutored undergraduate students in **advanced data structures**, including trees, graphs, priority queues, hash maps, and memory management, and received a 100% approval rating from students
- Assisted 300+ students in understanding and applying data structure concepts during one-on-one debug sessions

Software Engineer Intern Jun. 2022 – Aug. 2022

General Atomics *Poway, CA*

- Streamlined critical flight systems by refactoring 5+ C/C++ sub-projects, boosting Autonomous Takeoff and Landing Capability for remotely piloted aircraft, and enhancing video quality on infrared cameras
- Contributed to resolving 16% of backlogged bugs in **C/C++/JavaScript**, which spanned the crew alert system, aircraft/ground control communication, and Autonomous Takeoff and Landing Capability
- Enhanced the UI of the crew alert system in XML to support 25+ alerts between the aircraft and ground control station

Software Engineer Intern Jun. 2021 – Sep. 2021

Cardea Bio *San Diego, CA*

- Developed a **C#.NET** application that fully integrated 15+ liquid-handling robots, allowing scientists to start/stop robots, upload experiment files, and retrieve the robot's operational status
- Designed a **RESTful API** on the robot's Linux server, enabling communication and control between the robots and internal software, facilitating real-time retrieval of lab experiment status, current operations, script uploads, and robot control functionalities
- Automated 20+ robotic lab experiments by developing **Python** scripts that leveraged queried data from a **MySQL** database, resulting in increased efficiency and accuracy of lab trials

Projects

Job Application Tracker | *HTML, CSS, JavaScript, Puppeteer, Jest* | *Link*

- Configured a comprehensive CI/CD pipeline using GitHub Actions for automated linting, HTML validation, documentation generation, and testing of code changes
- Executed E2E (end-to-end) tests using **Jest** and **Puppeteer** that simulate user interactions, such as clicks and form submissions, to ensure the app's overall functionality with 97% code coverage
- Designed a user-friendly **HTML/CSS** interface optimized for various screen sizes and devices

Huffman Compression and Decompression Tool | *C++*

- Implemented a Huffman compression and decompression tool in C++
- Constructed a Huffman tree using a bitwise buffer and tree serialization, leading to a 30% decrease in file size
- Optimized and profiled runtime using gprof (GNU Profiler), leading to a 10% decrease in overall runtime

Technical Skills

Languages: C/C++, Python, C#, Java, JavaScript, SQL
Technologies: AWS, Git, Subversion, .NET, Node.js, Flask, JUnit, MongoDB
Frameworks : Mockito, Spring, Express
Other: Scrum, Agile Methodologies, CI/CD, REST