Richard Jin

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected May 2024**
Bachelor of Science, Computer Science, Minor in Business
GPA: 3.909; Dean's List
Relevant Courses: Algorithm (**Java**), Software Testing (**Java, JUnit**), Machine Learning (**Python, Pytorch, Matlab**), Computer Vision (**Python, OpenCV**), Operating Systems (**C++**), Database (**SQL**), Functional Programming (**Ocaml**)

TECHNICAL EXPERIENCE

Software Development Engineer Intern, Amazon Web Services, Arlington, VA **May 2023 – August 2023**

- Create and integrate an observability tool into a platform that manages **over 200 tools** used by **Amazon Physical Store Tech**, using **Node.js** and **AWS SDK** for **CloudWatch** and **IAM API calls**. This enhancement significantly streamlined the debugging process by enabling effective monitoring of the internal application states.
- Optimized data retrieval and processing from **over 150 stores** using **scripts** and the **AWS DynamoDB SDK**, facilitating tool access management for **Amazon Physical Store Tech**.
- Successfully migrated web-based application tools from the deprecated **AngularJS framework** to the more secure and modern **ReactJS framework**, mitigating potential security vulnerabilities due to deprecation.
- Implemented **over 100 unit tests** for new features using the **Jest testing framework**, achieving an automated test coverage of **over 97%**. Subsequently performed **integration testing** to verify the interoperability of features.
- Resolved IT service tickets submitted by customers who reported issues with these application tools.
- Edited developers' runbooks for these application tools to enhance clarity in technical communication.

LEADERSHIP EXPERIENCE

Firmware Engineer & Subteam Lead, Combat Robotics at Cornell, Ithaca, NY **January 2021 – Present**

- Designed and assembled **electrical systems** for remote-controlled **combat robots**, including Lance, which **won first place** in the Sportsman category at the April 2022 **NHRL competition**. [One min recap of our competition]
- Developed a 6-milestone timeline and a flexible **minimal viable product plan** with optional add-ons to prevent all-or-nothing situations. Facilitated a **fast-paced and collaborative environment** within the Firmware subteam.
- Distributed tasks among 10 teammates, provided programming support, and assisted struggling members to ensure their success. Collaborated with the leadership board to swiftly address unexpected challenges and delays.

RESEARCH EXPERIENCE

Co-author, SciFi Lab, Cornell University, Ithaca, NY **September 2021 – Present**

- Collaborated with 9 other researchers to develop **wearable devices** equipped with **minimally intrusive sensors**. These sensors are designed to track the wearer's identity, upper body posture, and silent speech commands.
- Contributed in developing and implementing **data collection** code to **integrate seamlessly** with **hardwares components** such as Raspberry Pi Models, Pi cameras, mini-speakers, and mini-microphones, ensuring robust data gathering for **training** and **performance evaluation** of deep learning pipelines. Subsequently augmented datasets by applying computer vision techniques, utilizing tools such as **Matlab**, **Python**, and **OpenCV**.
- Collaboratively developed **deep learning pipelines** in **Python**, using **PyTorch** as the framework. Utilized **UNet** and **ResNet** network architectures to interpret data captured by sensors on wearable devices.
- Leverage **high-performance GPU** on **lab server** for **efficient training** of deep learning models, ensuring **accelerated computation** and **optimized performance**.
- Developed and deployed an **Android app** in **Android Studio**, featuring a high-performance deep learning model for predicting silent speech commands in real-time from wearable devices. Integrated the app with an **ESP32 microcontroller**, programmed with **PlatformIO** in **VSCode**, for keyboard input execution on laptops and iPads.
- **Publications** to which I contributed as a co-author: [C-Auth], [HPSpeech], [PoseSonic]

PROJECTS

Show Tracker App | iOS Development, Swift, Python, Ruby, Docker, Github

- Jointly worked with four other programmers to create an **iOS app** for managing and tracking shows. [Demo]

Personal Website | JavaScript, HTML, CSS

- Developed my own personal website using a template from HTML5 UP as a foundation. [Website Link]

SPECIALIZED SKILLS

Skills: Python , C++ , Java , TypeScript , ReactJS , AngularJS , AWS , API , MySQL , Ocaml , Swift , C# , HTML , CSS