Chenjie Wu

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EDUCATION

University of Southern California, Los Angeles, CA — *Expected* May. 2024
Master of Science in Computer Science

University of Michigan, Ann Arbor, Ann Arbor, MI — May. 2022
Bachelor of Science in Computer Science

SKILLS

Programming: Java, C/C++, Python(NumPy, Pandas), SQL, HTML & CSS, JavaScript, TypeScript
Frameworks: Flask, Vue.js, Bootstrap, Angular, Node.js Express, PyTorch
Database/Big Data Engineering: MongoDB, MySQL, PostgreSQL, Redis
Industry Knowledge: AWS(EC2), GIT, CI/CD, JPA, Docker, Android development, JUnit, PyTest

WORK EXPERIENCE

Dorabot Inc. — May. 2021 - Aug. 2021
Software Engineer Intern, Department of AIoT — *Shenzhen, China*

- Designed and maintained **full-stack project** with both web pages and **RESTful APIs** that automate training and testing of 10+ container planning algorithms used in the logistics industry.
- Engineered a user-friendly web page using **Vue.js**, enhancing data visualization and implementing efficient data pagination, resulting in a 20% reduction in page load time.
- Developed backend features using **Flask**, including web APIs, data processing and formatting and databases integration.
- Optimized the processing of training/testing request by 30% using **Redis** cache and waiting queue.
- Administered a **PostgreSQL** database on **AWS** to store more than 1000 datasets and data results.
- Conducted rigorous **unit tests** and **integration tests** to validate the functionality, performance, and accuracy of the application, covering more than 95% of relevant source codes.
- Wrote and deployed scripts for **CI/CD pipelines** to maintain more than 2000 lines of high-quality source code merging into major branches of AIoT Department's Gitlab repo and ensure smooth rollouts with minimal regressions.

Gizwits IoT Technology Co., Ltd. — Jul. 2020 - Aug. 2020
Software Engineer Intern — *Remote*

||*IoT Device Control System*||

- Contributed to a **IoT-based device control system** where customers interact with a controller, which triggers a connection to the backend through the Internet of Things.
- Familiarized with the backend system which receives requests from user and send commands to the IoT devices.
- Implemented **unit tests** and **integration tests** for Web APIs of the control system using **PyTest**, achieving 97% test coverage.

||*Machine Breakdown Detection System*||

- Trained an LSTM-based machine learning model to accurately detect machine breakdowns in a sewing company's production line using **PyTorch**. Reached 91% of training accuracy by carefully tuning the model hyperparameters using cross-validation.
- Conducted comprehensive testing to evaluate the precision and accuracy of the machine breakdown detection system and achieved 87% of testing accuracy.

PROJECTS

C++ Pathfinding Algorithm Project (Video Demo) — Mar. 2023

- Designed and implemented support on **navigation mesh** in the game engine **PrimeEngine**.
- Implemented and applied **K-D tree** on storing navigation mesh to foster mesh searching. Implemented **A* algorithm** to find best path between player and NPC, and used it to made NPC walking to player.
- Reduced the pathfinding running time to less than 1/10 of original code by caching the existing route.

Business Search Project (Website) (Android App Demo) — Dec. 2022

- Designed **full-stack application** which provides users with an easy way to search for millions of restaurants, salons, and other businesses in the whole world by name, location, distance, and category, on both web browser and mobile application.
- Utilized backend frameworks **Node.js Express** to handle user requests. Integrated **Yelp Fusion API** and **IPinfo** to offer accurate address information & sharing on social media & making reservations and etc.
- Used **Angular** with **Bootstrap** for responsive website and **Android 12 (API 31)** for android devices to deliver a user-friendly interface and interactive experience, such as autocompletion and auto-detecting location.
- Utilized **Volley** and **Picasso** in the Android app for networking and image downloading.