

# Jiayu Pu

Los Angeles, CA

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## EDUCATION

### University of Southern California

Jan 2022 - May 2024

Master of Science in Computer Science, GPA: 3.3 / 4.0

Los Angeles, CA

Relevant Courses: Data Structure, Algorithm, Object-oriented Design, Database System, Web/Mobile Development, Machine Learning, Operating System, Game Design, Computer Network

### The Ohio State University

Aug 2017 - May 2021

Bachelor of Science in Electrical and Computer Engineering, GPA: 3.6 / 4.0

Columbus, OH

## TECHNICAL SKILLS

**Programming Languages:** Java, Python, C/C++, Golang, JavaScript, MATLAB, SQL, C#, R

**Web/Mobile Development:** Java Servlet, Spring, Hibernate, Ant Design, ES6, LESS/SASS, Elasticsearch, React.js, Vue.js, Retrofit

**Tools:** Git, Linux, AWS, GCP, MySQL, PostgreSQL, Docker, Maven, Tomcat, Postman, Android Studio, Unity

## WORK EXPERIENCE

### PLANET CENTS, INC.

Sep 2021 - Dec 2021

Tech Team Lead | Software Engineer Intern

Clearlake, CA

- Led an Agile team of 5 to develop and maintain the e-commerce website with **Shopify**, set and tracked agendas of all activities
- Created a functional product search page for the website by using **Vue.js** with Shopify's predictive search APIs, improving users' search experience and increasing target audience engagement by 13% measured by Shopify analytics
- Translated 10+ UI/UX designs to Shopify theme implementations, resulting in customized elements layout of the website

### Cardiovascular Magnetic Resonance Imaging Lab

Jan. 2020 - May 2021

Machine Learning Researcher

Columbus, OH

- Developed a machine learning classifier to predict the efficacy of catheter ablation in patients with frequent premature ventricular contractions by analyzing CMR and ECG parameters
- Improved accuracy by 30% through dataset selection and fine-tuning neural network model parameters using confusion matrix analysis
- Leveraged digital signal processing and medical imaging knowledge to assist domain experts in risk stratification and accurate diagnosis assessment
- **PUBLICATION:** Bhatti, S.; Pu, J.; Azfal, M.; Mann, J.; Gil, K.; Sheets, E.; Hopper, J.; Tong, M.; Ahmad, R. Predicting Success of Catheter Ablation for Patients with Premature Ventricular Contractions from CMR and ECG Parameters. SCMR's Virtual Scientific Sessions 2021

## PROJECTS

### Operating System Kernel Development | C, QEMU, GDB

Jan 2023 - Present

- Developed a high-performance kernel for the Weenix Operating System using **C**, **QEMU** for testing, and **GDB** for debugging
- Designed and implemented critical features, including process and thread management, CPU scheduling algorithms, mutexes, signal and interruption handlers, path name resolution, virtual file systems, and system calls (e.g., open, read, write, close)
- Optimized virtual memory management by implementing a page table, page fault handling routine, and system calls (e.g., fork, mmap), resulting in a significant improvement in system performance

### Guinguin Food Online Ordering System | Spring, Hibernate

Jul 2022 - Sep 2022

- Built **RESTful APIs** via **Spring MVC**, including registration, menu searching and ordering, checkout etc., which increased the modularity of the web application, and promoted the separation of concerns
- Utilized **Hibernate** to access and operate the data storage (menu, restaurants etc.), solving the data mismatch found between the object oriented classes of an application and relational database
- Implemented authentication and authorization via **Spring Security with JWT**, protecting the application from malicious attacks
- Built the client side with **React.js** and **Ant Design**, allowing users to add items to the shopping cart and place orders
- Deployed the application to the **AWS EC2** virtual machine with **Docker** for demonstration

### Aroundagram Social Networking | Go, Cloud

May 2022 - Jul 2022

- Designed and implemented a social network web application with **React.js**, boosting the speed and flexibility of development
- Implemented the authentication using token-based registration/login/logout flow with **React Router v4** and server-side user authentication with **JWT**, increasing the scalability and efficiency
- Launched a scalable web service in **Go** to handle posts and deployed to **Google Cloud (Google App Engine)**
- Increased the performance and the scalability by using **ElasticSearch** (deployed to GCE) to provide search functions

### Guinguin News - Tinder-like News App | Android

Apr 2022 - May 2022

- Designed a Tinder-like news app based on Google Component Architectural **MVVM** pattern, realizing the decoupling of the code
- Implemented the bottom bar & page navigation using **Jetpack's Navigation** component, enabling and handling deep linking
- Utilized the 3rd party **CardStackView (RecyclerView)** to support swipe gestures for liking/disliking the news, integrating animations for adding, updating and removing items, increasing the performance when loading list items
- Built the **ROOM** Database with LiveData & ViewModel to support local cache and offline mode, minimizing repetitive and error-prone boilerplate code, streamlining database migration paths