KAIHAN ZHU (PETER)

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO (UCSD) Expected Graduation: June 2021

Bachelor of Science in Computer Science Major GPA: 3.926 / 4.0

SKILLS

Languages: Swift, Python, Java, C++, C, HTML, CSS, JavaScript, PHP, SQL, Assembly, R

Tools: Xcode, SciPy, NumPy, Tensorflow, Anaconda, Git, OpenCV, React Native, Bash, Unix, Linux, GDB, Vim, Eclipse, MySQL

WORK EXPERIENCES

CSE 140 DIGITAL DESIGN TECHNIQUES TUTOR, University of California, San Diego Apr 2019 - Jun 2019, Aug 2019 - Sep 2019

- Assisted instructor by tutoring students who require additional help. Enhanced communication skills.

JAVA ENGINEER INTERN, Shanghai Amarsoft Information Technology Corporation Aug 2018 - Sep 2018

- Utilized **Java**, **Oracle**, Tomcat to design, manage, and service a fully functional, dynamic, and expandable management system for controlling loans for a variety of customers.
- In-depth design of databases, the user privilege managing, the cooperation between team members, the use of **Git** in real teams, etc.

WEB DEVELOPER @SHGREENPOOL.COM, Shanghai Greenpool Environmental Tech Co., Ltd. Jun 2017 - Sep 2018

- Plan, build, and maintain the entire architecture of a dynamic website with **LAMP** model and **responsive UI design** from scratch.
- Fully **PHP** based with a **MySQL** database storing contents and a complete usable admin system for editing websites.
- Extensive practices of **PHP**, **HTML**, **CSS**, **JavaScript**, **SQL**. Real-life experience with **MySQL** and servers.

PROJECTS AND COMPETITIONS

DELIVERY LOCKER, San Diego, CA since Aug 2019

- A locker that allows the user to accept packages and be notified of it while they are not home.
- Used **Raspberry Pi** with **Arch Linux** as basis, with **GPIO** for locks and **Image Processing** to recognize tracking number barcodes.
- Built a **RESTful API** for the server, allows the user to receive a WeChat notification when the delivery person scans and stores the package.

STUDENT AND STUDENT HOUSING @SSH.ZHUKAIHAN.COM, La Jolla, CA Mar 2019 - Jun 2019

- Built an application to allow UCSD students to find houses for rent easily without exposing personal information.
- Research technologies and developed a majority of this **React Native** application as a software architect.
- The application communicates with **Firebase** and authenticate users with Google accounts. UCSD students can post houses online for others to rent, as well as their profiles for finding roommates.

OBSTACLE DETECTION (ECE DESIGN COMPETITION) @OD.ZHUKAIHAN.COM, La Jolla, CA Feb 2019 - Jun 2019

- Used technologies to help detect obstacles that may cause patients with Parkinson's disease to fall.
- **Co-lead** the team to partition workloads, manage collaboration strategy, advise appropriate technologies, and develop a significant portion of the software alongside with teammates.
- Programmed data collection software that combines disparity map from dual-camera system with RGB image. Trained a single shot detector with **Tensorflow** to detect potholes, unlevel concretes, stairs, edge of the sidewalk, etc. Deployed the trained model onto **iOS** platform through developing an application.

RECT() (WEB AND IOS), Stanford, CA Jun 2015 - Jan 2016

- A group project during a summer at Stanford, web version for practicing fast prototyping and converted to iOS for fun. Experienced with **software development cycle**, from design to testing.
- Lead the design and programming of Rect() with MelonJS. I later converted this web game to a stable iOS game and achieve a fully **object-oriented design** with SpriteKit. Used Tiles to create XML file for game levels.

CRC (CHINA ROBOTICS CHALLENGE, POST SEASON FRC), Shanghai, China Jun 2016 - Aug 2016

- Developed an algorithm to detect a targeting shape with the robot's controller, **RoboRio**, and a vision controller, **NVIDIA Jetson TK1**.
- Responsible for robot's software and its vision. Utilized **serial and TCP/IP** communication, **OpenCV** to complete the task of detecting a targeting shape with a camera and communicating such information to robot's controller. Researched various noise reduction techniques, edge detecting algorithms, and shape descriptors to detect the targeting shape.

ULTRA SIMPLE BROWSER (ON APP STORE), Poughkeepsie, NY Sep 2014 - Sep 2015

- Developed an iOS browser that allows people to navigate through the internet with simple mechanics with **Xcode** and **Swift**.
- **Multithreaded**-fetch of search engine suggestions, decoding **JSON** and **XML** data, database for storing history and favorited tabs, and Quartz 2D for additional animations.