KAIHAN ZHU (PETER)

kaihan.zhu@zhukaihan.com | 858-247-8919 | La Jolla, California
http://zhukaihan.com | Github: zhukaihan

September 2017 – June 2021 University of California, San Diego BS in Computer Science Major GPA: 3.906/4.0 Provost Honors

SKILLS

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

Tools: Xcode, 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; April 2019 to June 2019, August 2019 to September 2019

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

Java Engineer Intern — Shanghai Amarsoft Information Technology Corporation; August 2018 to September 2018

- Used **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, how **Git** is actually used in real teams, etc.

Website Developer and Administrator — Shanghai Greenpool Environmental Technology Co., Ltd.; since June 2017

- At shgreenpool.com.
- 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

Student and Student Housing — March 2019 to June 2019

- Build an application to allow UCSD students to find houses for rent easily without exposing personal information.
- As a software architect, I research technologies and developed a majority of this **React Native** application.
- 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) — February 2019 to June 2019

- Use technology to detect obstacles that may cause patients with Parkinson's disease to fall.
- As a major contributor, I **co-lead** the team to partition workloads, manage collaboration strategy, advise appropriate technologies, and develop alongside with teammates.
- I programmed data collection software that combines disparity map from dual-camera system with RGB image and an object detection network to detect potholes, unlevel concrete, stairs, edge of the sidewalk, etc. My team collected data, while I trained the network with **Tensorflow** and deployed the trained model.

Stock Prediction — July 2017 to August 2017, revising since July 2019

- Predict a stock's trend using historical data with deep learning with **Tensorflow**. Using LSTM RNN combined with CNN.
- I studied CS231n from Stanford University. Implemented most-used layer with **NumPy** using **Python**. Realtime data sourced from AlphaVantage. Understood deep learning, backpropagation, the use and ideology of different layers, and the methodology of different famous networks on a mathematical level.

Rect() (Web and iOS) — June 2015 to January 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.

Ultra Simple Browser (On App Store) — September 2014 to September 2015

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

CRC (China Robotics Challenge, Post Season FRC) — June 2016 to August 2016

- Use robot's motion controller, **RoboRio**, and its vision controller, **NVIDIA Jetson TK1**, to detect a particular shape.
- Responsible for robot's software and its vision. Utilized **serial and TCP/IP** communication, **OpenCV**, different mechanical and electrical designs, etc. Completed the task of detecting a targeting shape using a camera and communicate such information to another embedded board. Researched various noise reduction techniques, edge detecting algorithms, and shape descriptions to detect the targeting shape.