KAIHAN ZHU (PETER)

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EDUCATION

September 2017 – June 2021: University of California, San Diego; BS in Computer Science Major. GPA: 3.953/4.0. Provost Honors.

RELEVANT COURSES:

- Advanced Data Structures (**Java**, **Eclipse**, **C++**)
- Software Tools and Techniques Laboratory (**Git**, **GDB**, **Bash**, **Unix**, **Linux**)
- Mathematics for Algorithms and Systems
- Computer Organization & Systems Programming (**C**, **Assembly**, **Vim**)
- Theory of Computation
- Statistical Methods (**R**)

WORK EXPERIENCES

JAVA ENGINEER INTERN — Shanghai Amarsoft Information Technology Corporation; August 13 to September 21, 2018

Job Duty: 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.

Skills Enhanced: 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

Job Duty: 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.

Skills Enhanced: Extensive practices of **PHP**, **HTML**, **CSS**, **Javascript**, **SQL**. Real-life experience with **MySQL** and servers.

PROJECTS AND COMPETITIONS

STOCK PREDICTION — July to August 2017, currently revising since May 2018

Goal: Predict a stock's trend using historical data with deep learning with **Tensorflow**. Using LSTM RNN combined with CNN.

Method: Studied course CS231n from Stanford University. Implemented most-used layer with **NumPy**. Realtime data sourced from AlphaVantage. Understood what deep learning does mathematically, backpropagation, the use and ideology of different layers, and the methodology of different famous networks.

RECT() (IOS VERSION) — January 2016, polishing and publishing since January 2019

Origin: Originally a group project at Stanford summer, created a web version based on MelonJS, and is later converted to iOS by myself. Experienced **game or software development cycle**, from design to testing. Original Rect() was created to practice prototyping for real world applications.

Goal and Method: Achieve a fully **object-oriented design** with higher fluency through utilizing SpriteKit. Use Tiles to create each level of the game and parse the **XML** file resulted to build actual nodes for the game.

ULTRA SIMPLE BROWSER (ON APP STORE) — September 2014 to September 2015

Goal: Use **Xcode** and **Swift** to create an iOS browser that allows people to navigate through the internet with simple mechanics.

Method: **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 to August 2016

Goal: Programmed robotics controller, **RoboRio**, using **C++** and robot vision using **OpenCV** with **NVIDIA Jetson TK1**.

Method: Designed robot with **Creo**. Learned about **serial and TCP/IP** communication, **computer vision**, different mechanical and electrical designs and configurations, etc. Completed the task of searching a targeting shape using a camera and communicate such information between various embedded boards across the robot. Researched various noise reduction techniques (dilate & erode, different blurs), edge detecting algorithms (Laplacian, Sobel, Canny, etc), and shape description (polygon fitting, moments, image comparison with GPU acceleration, etc).