KAIHAN ZHU (PETER)

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EDUCATION

UNIVERSITY OF PENNSYLVANIA (PENN)   Expected Graduation: May 2023

MSE in Computer and Information Science

UNIVERSITY OF CALIFORNIA, SAN DIEGO (UCSD)   Sep 2017 - Jun 2021

BS in Computer Science   Major GPA: 3.961 / 4.0

SKILLS

Languages: Python, Java, C++, C, Swift, Pascal, HTML, CSS, JavaScript, PHP, SQL, Assembly (ARM Cortex-A, MIPS, x86), R

Tools: Git, Linux, Bash, Vim, Boost.Asio, g++, Xcode, React Native, Flutter, GDB, Eclipse, MongoDB, MySQL, PostgreSQL, Anaconda

WORK EXPERIENCES

RESEARCH SCIENTIST, Nanotools Bioscience   Mar 2020 - Jun 2021
- Responsible for building a Python GUI application to allow researchers to batch process videos or sets of images using the method researched with **TKinter**, **Threading**, and **Pyinstaller**. The application was built with future extension in mind.
- Researched methods to segment individual cardiomyocyte cells' boundaries in videos and to extract and analyze action potential and contraction traces using **image processing**, **computer vision**, **machine learning**, and **signal processing** methods.

COMPUTER SCIENCE TUTOR, University of California, San Diego   Apr 2019 - Jun 2020
- Tutored computer science courses and assisted professors by holding office hours, grading homework, and creating exam questions.

JAVA ENGINEER INTERN, Shanghai Amarsoft Information Technology Corporation   Aug 2018 - Sep 2018
- Utilized **Java**, **Oracle**, and Tomcat to design, manage, and service a fully functional, dynamic, and expandable management system for controlling loans for Wanda Group's financial institution.
- In-depth design of databases, the user privilege managing, the cooperation between team members, the use of **Git** in real teams, etc.

FULL STACK DEVELOPER, 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.

RELAVANT PROJECTS AND COMPETITIONS

ONLINE POSTING PLATFORM, Philadelphia, PA   Sep 2021 - Now
- Building, as a team player, a **React** web software that allows people to join interest groups, post articles, and chat among each other.
- Responsible for designing wireframes, designing **RESTful API**, setting up **MangoDB**, and programming both backend and frontend.

BOMBING GAME, La Jolla, CA   Mar 2021 - Jun 2021
- Built, as a team player, a multiplayer 3D 3rd-person-view game from scratch, including server-client communication and graphics engine.
- Responsible for the whole **server-client networking** system, server game logic, and debugging client graphics.
- Designed and programmed networking with **Asio** framework for one server and up to 4 clients, and game state synchronization.

STOCK PREDICTION USING TRUMP'S TWEET, La Jolla, CA   Sep 2019 – Dec 2019
- Assess S&P 500's reaction to Donald Trump's tweet with **Tensorflow**, using word embeddings and **LSTM**.

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. UCSD students can post houses online for others to rent, as well as their profiles for finding roommates.
- Research technologies and developed a majority of this **React Native** application as a software architect.
- The application communicates with **Firebase asynchronously** and authenticate users with Google accounts.

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.
- Programmed an iOS data collection software that encoded disparity map from dual-camera system to the alpha channel of an PNG image. The images are stored in local storage and can be exported as a zip archive.
- Trained a single shot detector with **Tensorflow Object Detection API** to detect obstacles including potholes, unlevel concretes, stairs, edge of the sidewalk, etc.
- Deployed the trained model onto an **iOS** application with sound alert and visualization using **Tensorflow Lite**.