Kaihan Zhu (Peter)

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EDUCATION

University of Pennsylvania (Penn) — **Aug 2021 - May 2023 (Expected)**
MSE in Computer and Information Science — Major GPA: 3.77 / 4.0

University of California, San Diego (UCSD) — **Sep 2017 - Jun 2021**
BS in Computer Science — Major GPA: 3.96 / 4.0

WORK EXPERIENCES

Software Engineer, Nanotools Bioscience, *La Jolla, CA* — Mar 2020 - Jun 2021
- Built a **Python** GUI application to allow researchers to batch process videos or sets of images using the method researched.
- Used **TKinter**, **Threading**, and **Pyinstaller** to create an easy-to-use GUI application.
- Implemented methods to segment cells' boundaries in videos and to extract and analyze traces using **image processing**, **computer vision**, **machine learning**, and **signal processing** methods.

Software Architect, Shanghai Greenpool Environmental Tech Co., Ltd., *Shanghai, China* — Sep 2019 - Jan 2020
- Built a personal delivery locker that allows deliveries to be contactless, also provides real-time monitoring system and prevents theft.
- Used **Raspberry Pi** with a touchscreen as prototype, **Python**, **TKinter**, **Bash Shell**, **GPIO**, **PHP**, **MySQL**, **QR Code**, and **WeChat API**.
- Produced a locker that allows scanning QR codes and lock control, as well as a WeChat client for managing and picking up packages.

Computer Science Tutor, University of California, San Diego, *La Jolla, CA* — Apr 2019 - Jun 2020
- Tutored computer science courses and assisted professors by holding office hours, grading homework, and creating exam questions.

Software Engineer, Shanghai Amarsoft Information Technology Corporation, *Shanghai, China* — Aug 2018 - Sep 2018
- Managed and serviced a fully dynamic and expandable management system for controlling loans for Wanda Group's financial institution.
- Utilized **Java**, **Oracle database**, **Tomcat**, and **Eclipse** to inspect and debug the user privilege management system after product launch.

Full Stack Developer, Shanghai Greenpool Environmental Tech Co., Ltd., *Shanghai, China* — 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.

PROJECTS AND COMPETITIONS

Online Posting Platform @group-social.zhukaihan.com**,** *Philadelphia, PA* — Sep 2021 – Dec 2021
- 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** with **Figma**, **RESTful API** with **SwaggerHub**, and **MangoDB** schema. Programmed both backend with **Express** and frontend with **React**. Deployed onto **Heroku**. Set up tests with **Jest** and **Cypress** with **Travis CI**.

Bombing Game @bombgame.zhukaihan.com**,** *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 in **C++** for one server and up to 4 clients, and game state synchronization.

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.
- Researched technologies and developed a majority of this **React Native** application as a software architect for the team.
- The application communicates with **Firebase asynchronously** and utilized **Google Sign-In**.

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, stored in local storage and can be exported as a zip archive. Used **UIKit**, **Core Graphics**, and **AVFoundation** with **Swift**.
- Trained a **single shot detector** using **Tensorflow** to detect obstacles including obstacles, potholes, stairs, edge of sidewalks, etc.
- Deployed the trained model onto an **iOS** application with sound alert and visualization using **Tensorflow Lite** with **Objective-C++**.

SKILLS

Languages:
Advanced Proficiency: Java, Python, HTML, CSS, JavaScript
Used to be Advanced Proficiency: C++, C, PHP, SQL

Tools:
Advanced Proficiency: React, git, Mongoose
Intermediate Proficiency: g++, MongoDB, PostgreSQL, Apache, Xcode