Zhenghao (Lucas) Dai

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SKILLS

C++ • Python • Java • HTML/CSS • Javascript(jquery) • SQL • Git • Unit test • Machine Learning • Swift
Linux • Raspberry Pi • Arduino • RIOT • ROS

EDUCATION

University of Southern California   Sep 2018 - Dec 2021
Computer Science B.S. Minor in Mobile App Development   GPA: 3.52
- Member of Chinese Students and Scholars Association (CSSA), Department of External Affairs. A specialist in the school's Department of Public Safety. Weekly communicate with DPS. Pass the voice of Chinese students to DPS
- Member of USC Association for Computing Machinery, USC IEEE

WORK EXPERIENCE

Alibaba Group Holding Limited   Jun 2020 - Aug 2020
Software Development Engineer Intern @AliOS   Hangzhou, China
- Learned the advanced operating of Alios and developed systematic applications for smart car operating system(AliOS). Independently solved bugs regard to current systemic application
- Helped with both touch control and voice control application - Express checking
- Developed the tiny app center application which allows user to access the tiny apps on the car. Passed by the evaluation committee and merged into the next version
- Involved with networking and Alibaba group's API calling(Alipay, Gaode map, Taobao). System Security, Application storage, Event checking

USC Robotic Embedded Systems Laboratory   Oct 2019 - Present
Student Worker (Research Assistant) Advised by Prof.Gaurav S. Sukhatme   Los Angeles, CA
- https://github.com/USC-ACTLab/crazyswarm
- Help with the development of the Crazyswarm platform for the open-source research multi-quadrotor robotics research
- Onboard control software (32-bit microcontroller, **embedded C**) and base station coordination/scripting software (PC, **C++** and **Python**)
- Design and establish a new velocity control mode for users to control multi-quadrotor
- Developed collision avoidance for onboard control software by using Buffered Voronoi cell algorithm
- Helped research to switch from python2 to python3
- Helped resilient coverage research. Collaborate and wrote the demo script

USC Viterbi School of Engineering   Jan 2020 - Dec 2020
Teaching Assistant   Los Angeles, CA
- Undergraduate TA for information technology program course - Web Publishing. Spring 2020 and Fall 2020.
- Hold office hours to answer students' questions about course materials, including laboratory assignments and tests
- Review course materials, grade homework and midterm exams, and hold review sessions

Zhejiang Guozi Robot Technology Co., Ltd.   Jun 2019 - Aug 2019
Software Development Engineer Intern   Hangzhou,China
- Developed a Pick-to-light (PTL) control software and GUI with **Python** and **PostgreSQL** for Staples' warehouse
- Encapsulated **Java** Archive for LED controlling with **Python**
- Improved lighting algorithm efficiency from 300 pieces per hour to over 600 pieces per hour

Project

Schedule Helper(Python)
- An application that will notify you when a class you want has an available seat as well as help you plan your schedule.
- Built high efficient **multi-threaded** Web crawler APIs with **Python**
- Developed **web server** with **Flask** and exchanged data with **HTTP** POST and GET
- Used and developed **RESTful** API to build a Wechat messenger bot that allows users to submit the request and check the availability also with an **IOS** client app
- Sent email and SMS notification with **SMTP** and **message gateway** to users
- Stored data with **MySQL** and ensued multi-threaded SQL executes with **lock**

Coeditor (Java)
- A google doc like Java Web Application that is designed especially for code sharing. Highlight the code with different languages. Users can share the code with a friend who can see the change of code simultaneously
- Lead and worked with a team of 5, designed data structure and networking flow

SalEats(Java JS JSP)
- A Java Web program that allows users to search the restaurant near users and add them to favorite or make a reservation that using yelp API
- Google sign in, Google calendar and Google Map
- Using Java servlet to build the back end and JS JSO for the front end

Raspberry Pi Light Sensor IoT System (C&Python)
- A home IoT system with easily deployable, battery-powered sensor nodes that will detect the intensity of light in each room of the house in order to determine when the lights have been turned on and off throughout the day.
- Used Raspberry Pi and openmote-cc2538 which programmed with **C** to collect lighting data in **multi-threads** and broadcasted data to the receiver node by using **UDP**
- Developed a web server that allows users to check light events with **Python** and **Flask**

Component-Labeling(C++)
- A C++ program that reads an image and identifies different objects in the image and label them