Vincent Liu

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Education

University of California, Santa Cruz — Santa Cruz, CA
Bachelor of Science, Computer Engineering — *Sept 2018 - June 2023*
University of California, Santa Cruz — Santa Cruz, CA
Minor, Computer Science — *Sept 2018 - June 2023*

Relevant Coursework

- Applied logic algorithms and created finite state machines for use on Basys 3 FPGA board, allowing for meaningful resource management in distributed systems
- Worked with database systems and created optimizations for database query performances leading to faster compilations with more organized statistics using both mock and real-time data
- Modified Arduino micro-controller to allow for use of a three dimensional accelerometer, ultrasonic distance sensing and infrared obstacle avoidance sensor

Experience

The Baskin School of Engineering
Student Tutor, Computer Programming and Networking

- Debugged and over viewed student code for over 20 students in C, correcting accuracy in assignments and finding possible causes of error
- Provided students with one-on-one tutoring to help them understand concepts better, including socket file transfers, transmission protocols and simulations of client and server
- Created weekly learning goals, resulting in a 40% improvement in assignment scores and an 85% passing rate in final grades

Projects

Daily Life Scheduler
The Baskin School of Engineering Design Project — August 2022

- Led the development of a web-app based reminder system, resulting in a 40% increase in daily productivity towards personal goals of 15 students using React framework
- Designed the UI and created an interactive task table that sends reminders to registered emails using the SendGrid API as an email service
- Conducted meetings for team members following SCRUM methodology and organized sprint plans during project progression

Automated Plant System
The Baskin School of Engineering Design Project — April 2023

- In a team, designed and developed a scalable plant care system to fulfill basic needs for plant growth over an extended period away
- Resulted in an 80% success rate in thriving plants compared to those of similar living conditions
- Implemented a webapp using ReactJS and cloud storage through AWS to create a dashboard for users to check plant status or schedule water cycles
- Utilized I2C device, GPIO and Arduino IoT device to compile readings for soil moisture, temperature, lighting and water reservoir levels to store in database for presentation through web-app, creating optimized storage for data retrieval

Technical Skills

Programming Languages: Python, C, C++, Arduino, SQL, Javascript
Tools/ Frameworks: Vivado, VSCode, Unix, Git, ReactJS, NodeJS, Firebase
Concepts: Computer Networking, Digital Logic, Embedded Systems, Computer Hardware Architecture, Machine Learning, API, Database Normalization, Agile Methodology, Circuits, Data Types and Structures, Statistics and Data Analytic, Cyber security