

Robert Wong-Sing

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OBJECTIVE

A fresh graduate of Computer Engineering seeking a full time role as a software engineer. Bringing expertise in writing full-stack code, as well as a solid grasp of data structures and object-oriented designs.

TECHNICAL SKILLS

Languages: C/C++, Python, SQL, Java, JavaScript, HTML/CSS

Frameworks/Tools: Git, Linux, Bash, Flask, PostgreSQL, Matlab, MongoDB, Splunk

EDUCATION

University of California Santa Cruz

Bachelor of Science in Computer Engineering

Santa Cruz, CA

Sep 2018 – Jun 2021

- Concentration in Systems Programming
- Activities: Slugs United by Math, Slug Gaming
- Relevant Coursework: Data Structures and Algorithms, Computer Architecture, Computer Systems, Network Programming, Database Management Systems, Embedded System Design, Logic Design

EXPERIENCE

San Francisco Bay Area Rapid Transit (BART)

Systems Engineering Intern

Jun 2021 – Aug 2021

Oakland, CA

- Designed weather visualization overlay that displayed hazard icons on top of a map of 100+ BART stations, aerial structures, and railways based on internal sensor and public weather data
- Constructed search queries and scripts utilizing REST API calls to store data in Splunk database, allowing for real-time updates to the BART map for maintenance workers to visualize current weather conditions
- Packaged and deployed Open Source version of Visual Overlay App to Splunkbase, accumulating over 50 downloads across 5 countries
- Leveraged knowledge in Full Stack Web development, JavaScript, Shell scripting, Python, Splunk, and Git

Disability Resource Center at UC Santa Cruz

Technology Assistant Lead

Oct 2019 – Jun 2021

Santa Cruz, CA

- Informed students with disabilities on assistive software through demonstrations of various accessible technologies
- Managed hardware within the Inclusive Computing and Technology Lab on the UCSC campus and refined laptop loan process to be simpler and more efficient through tracking in Google Sheets
- Researched and advocated for the purchase of accessible technologies that benefited the visually impaired
- Designed and integrated Python script that scrapes inventory data from spreadsheets and converts it into interactive visual graphs to chart the monthly distribution of Livescribe smartpens

Maxar Technologies

Software Engineering Intern

Jun 2020 – Sep 2020

(remote) San Jose, CA

- Increased efficiency of testing analysis through the creation of a rollback feature that allowed engineers to simultaneously compare current data with previous iterations located in a MongoDB database
- Implemented a notes system that required user authentication to allow for a secure and user-friendly experience, enabling engineers to communicate with each other across teams
- Interfaced across Ground Software teams under the Space Infrastructure branch in weekly scrum meetings and participated in bi-weekly sprint planning
- Leveraged knowledge in Full Stack Web development, JavaScript, Python, and Git

PROJECTS

Microcontroller Oscilloscope | *C, C++*

- Designed the user interface and backend of an oscilloscope on a PSoC6 microcontroller
- Utilized EmWin API to draw the plots of to 2 waveform signals at the same time with dynamic updating
- Implemented hardware components such as ADC, DMA, and UART to perform data transfers and parsing user commands
- Optimized code to efficiently calculate frequencies and draw varying waveforms with minimal data loss

Movie Night Web App | *Python, HTML, JavaScript, Flask, SQLite*

- Created web application that centralized and stored movie suggestions in a SQLite database
- Called from IMDbPY API to scrape movie data including movie duration, ratings, and genres
- Implemented sorting algorithms and randomized movie selections that query through the database allowing for a fast and easy movie decision
- Designed user interface with intuitive, readable buttons for a simple aesthetic using HTML, Jinja, and JavaScript

Multithreaded Chat Program | *C, C++*

- Created an rpc server that forwarded chat requests between clients and handled connections
- Utilized sockets and bounded buffers to transfer requests and responses using TCP protocols between client and server
- Integrated linked lists, locks and semaphores to store and share data without possibility of race conditions, including lookups of the waiting clients
- Optimized concurrency and threading to handle multiple clients and millions of requests in parallel, outperforming 95% of the other servers in the class

Card Games | *Go*

- Constructed reusable deck of cards package with custom shuffling and multiple deck features
- Implemented classic card game Blackjack that allowed the player to continuously play against computer AI while tracking the number of hands won
- Utilized Go testing package for unit testing individual components and state machines for transitioning between game phases

ADDITIONAL ACTIVITIES

Hack:now Attendee

Apr 2020

- Collaborated with 3 other hackers to develop a platform for small businesses to showcase who they are and how they're doing during the Covid-19 pandemic
- Directed the front end development that produced a clean user interface for the web application using knowledge of HTML, Jinja, and JavaScript
- Scraped Yelp API for restaurants within 10 mile radius of given zip code and persisted them in Google Firestore

CruzHacks 2020 Attendee

Jan 2020

- Developed a voice assistant using Python that allowed users to retrieve Google Calendar events and save custom textedit notes
- Integrated Google Auth library and token pickle to hide token keys, ensuring a secure experience
- Utilized pyttsx3 for text to speech capabilities and included 20+ phrases to wake up the program