Ruben Perez

+1 408-430-4740 • perezben37@gmail.com • linkedin.com/in/rubaduben

Website:

Summary

Enthusiastic and results-driven Computer Engineer with a strong robotics and software engineering background. I am seeking to leverage my expertise in autonomous systems and software development to contribute to innovative projects in the field of robotics.

Education

Bachelor of Science | *Computer Engineering with a Concentration in Robotics*   September 2017 – June 2021
University of California, Santa Cruz   Santa Cruz, CA

Projects

Custom OBD2 Python Module | *Python*   January 2024 – February 2024
Independent
- Developed an *asyncio* and *SocketCAN*-based Python module for interfacing with vehicle's OBD2 systems. The module features a CANPort object for socket management, raw CAN datagram packet handling, and CAN port filter configuration.

STM32 Wireless CAN Transceiver/Receiver | *C/C++*   March 2024 - Present
Independent
- Working on an embedded system using an *STM32* microcontroller to interface with a vehicle's OBD2 port and transmit CAN packets wirelessly using an nRF module.

Work Experience

Advanced Farm   Davis, CA
Software Engineering Manager of Testing   October 2022 – Present
- Lead software development efforts at an agricultural robotics startup, specializing in autonomous fruit harvesters.
- Successfully managed a cross-functional team of 3 software test engineers and 3 software support engineers
- Designed a network configuration *(L1-L4, L7)* for a distributed compute architecture, enabling field hardware replacement without reprogramming and reducing downtime.
- Led a project to migrate our robot's compute and vision stack from a combination of an *Intel NUC* and *Nvidia Jetson TX2* with a proprietary camera to a single *Nvidia Jetson Orin AGX* computer with a mini *Zed* camera.
- Designed and implemented a pipeline for receiving, extracting, and storing technical data from one of our company's flagship products. (*Debian*, *Prometheus*, *AWS*, *Grafana*, *Python*).

└ *Software Test Engineer*   November 2021 – October 2022
- Commissioned and validated a fleet of 16 robotic strawberry harvesters, ensuring the successful integration and functionality of their sub-assemblies and individual components.
- Optimized and took ownership of a critical robotic sub-system within three months, Effectively reducing position following error by a factor of 5 and greatly improved driveability in rough terrain. *Python*, *Twisted*, and *ZeroMQ*.
- Developed command line tool (Python) to decode CAN traffic into *CANopen* messages and plot-relevant sensor data and device state information.

└ *Software Support Engineer*   March 2021 – November 2021
- Monitored a fleet of strawberry harvesters in the field, providing software support and conducting maintenance to optimize performance and minimize downtime.

Skills

Languages: English (Fluent), Spanish (Native)
Programming: Python (NumPy, SciPy, Matplotlib, Twisted, ZMQ, Seaborn, Pandas, Numba, Asyncio), MATLAB, C/C++, Bash, Git
Software: ROS, Github, Linux, Gazebo, Excel, Fusion 360, stm32 CubeIDE