Dylan Harootunian

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Skills & Abilities
Languages: C, Python, C++, Java, Assembly, HTML5, JavaScript
Skills: Microcontroller Software Design, PCB Design, Pspice, Solidworks, Matlab, V-REP, Vivado,
Protocols: SPI, I2C, UART, USB

Education
ROBOTICS ENGINEERING B.S. | ELECETRICAL ENGINEERING MINOR | 2017-2021 | UNIVERSITY OF CALIFORNIA, SANTA CRUZ
· Robotics Engineering major teaches control systems, with strong backgrounds in electrical and software engineering with many classes utilizing microcontroller systems design.

Relevant Courses

Small-Scale UAV Theory & Practice, Microcontroller System Design, Sensors Technologies, Robot Kinematics & Dynamics, Signals & Systems, Analog Electronics, Electronic Circuits, Logic Design, Algorithms & Abstract Data Types, Control Systems Design, Linear Dynamic Systems

Experience
HARDWARE ENGINEER| SEADS | DEC 2020- DEC 2021
· Developed and constructed SEADS (Smart, Energy, Analytic, Disaggregation, and Systems) Hardware.
· SEADS takes readings of wall outlet. Database of voltage and current signals is used for anomaly detection and analysis within a microgrid.
· PCB design using Eagle for development of Raspberry Pi HATs used for SEADS.
· Microcontroller software written for RPi3 and MSP430 for signal processing.

CONTENT DEVELOPMENT INTERN| CISCO | SEP 2019- JUNE 2021
· Configure new and unreleased Cisco Small Business networking products for testing

CAD DESIGNER | SLUGBOTICS | JANUARY 2018-DEC 2020
· Designing and Fabricating ROVs that can complete a variety of tasks underwater
· CAD Design of mechanical parts using Solidworks.

Projects
Long Flight Time Buoyant Drone (Senior Capstone) [github.com/lgshuster/Barone2]

Developed, designed, and fabricated a drone for US Geological Survey that employs a helium lift bag to increase flight time and reduce interference with the magnetometer they use to collect geologic data.
- System control programming for running a sensors array and actuators off a PIC32 Microcontroller.
- Controls system designed for closed loop remote and autonomous navigation of drone.
- CAD design of drone in Solidworks to reflect design from force analysis. Used as basis for fabrication.
- Wiring schematics and PCB created and verified by power budget.
- Flight tests conducted on fabricated prototype.

Actuators Controls Programing

Using a PID closed loop control, with a motor and a rotary encoder the motor was commanded to specific angles.
- Magnetic data from rotary encoder was used to calculate the angle, and angular acceleration of the motor.
- Data from the rotary encoder was communicated using SPI and used to command motor angle.