

Galen Savidge

Robotics Engineering Student

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Education

- 2014–present **Bachelor of Science, Robotics Engineering**, *University of California, Santa Cruz*, Santa Cruz, CA.
GPA: 3.79
June 2019 Expected Graduation
Courses: Introduction to Mechatronics, Feedback Control Systems, Sensing and Sensor Technologies, Models of Robotic Manipulation, Microprocessor System Design, Algorithms and Abstract Data Types, Introduction to VLSI

Experience

- Oct 2018–present **Mechanical Team Lead**, SLUGSAT, Microsatellite Senior Design Project.
Lead a team of 4 electrical and robotics engineers working to design an attitude control system for a CubeSat. Design and build space-grade sensors and actuators. Write embedded C programs for 3-sensor attitude estimation and feedback control. Present work summaries, run meetings, and manage team tasks and deadlines.
- Apr 2018–June 2018 **Lab Tutor**, MICROPROCESSOR SYSTEM DESIGN, Embedded Systems Programming Course.
Helped students program microcontrollers to integrate sensors, communicate over serial connections, and use DMA. Debugged students' embedded C programs. Wrote test programs for use by the instructors.
- June 2016–Sept 2016 **Robotics Intern**, BIOMIMETIC MILLISYSTEMS LAB, UC Berkeley.
Developed and tested feedback control systems for use in bio-inspired locomotion techniques. Established the code base used for closed-loop control of multi-legged autonomous platforms. Implemented closed-loop feedback in C for wheeled and multi-legged designs. Designed and 3D printed parts using SolidWorks. Presented results, including improved mobility and efficiency of existing designs.

Projects

- Dec 2018 **Autonomous Mobile Robot**.
Designed, built, and tested an autonomous robot in a team of 3. Laser cut and assembled parts modeled in SOLIDWORKS. Designed multistage filtering circuits on protoboard and perfboard. Wrote hierarchical state machines in C.
- May 2018 **Optimization of Theo Jansen's "Strandbeest"**.
Simulated a multi-linked leg using MATLAB and optimized its design for maximum stability and efficient locomotion.
- March 2018 **Three Sensor Attitude Estimation**.
Implemented closed-loop attitude estimation in C on a PSoC 5 using raw data from a three-sensor IMU package. Calibrated for sensor drift and misalignment using MATLAB.

Awards

Dean's Honors List, F '14; W '15; W '16; W '17; S '17; F '17; S '18.
Tau Beta Pi, *Engineering Honor Society*.

Skills

- Languages & Software C, Java, Python, MATLAB, SOLIDWORKS, Git, digital filtering, embedded programming (experience with PSoC 5, PIC32, STM32 Nucleo, Raspberry Pi, and mbed), L^AT_EX
- Electronics Soldering & desoldering, DC motors & actuators, active/resistive/capacitive sensors, hardware filters
- Rapid Prototyping Perfboard layout & soldering, laser cutting, 3D printing
- Communication & Leadership Presenting, leading meetings, Gantt charts, grant writing