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, Raspberry Pi, and mbed), LaTeX

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