thomasteisberg

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EDUCATION

Stanford University BS EE 2017, MS EE 2018

Electrical Engineering | GPA 3.916

Selected Coursework: EE263 (Linear Dynamical Systems), EE285 (Embedded Sytems), EE102A/B (Signals)
CS 223A (Robotics), EE 225 (Biochips), EE 169 (Bioimaging), CS 107 (Computer Systems),
EE 108, 180 (Digital Systems Design), AA236A/B/C (Spacecraft Design Lab), EE 134 (Photonics)
CME 100-104, CS 214 (Computational Biology)

Math, Engineering, and Science Academy at Albemarle High School

Graduated 2013: Unweighted GPA 4.0

WORK EXPERIENCE

Engineering Intern at Rocket Lab *Auckland, New Zealand*

J*une 2016 - September 2016, Full-time*

Designed, built, tested, and integrated flight and ground-side custom electrical systems for data acquisition
and flight safety on the Electron launch vehicle

Avionics Intern at Space Exploration Technologies *Hawthorne, CA*

J*une 2015 - September 2015, Full-time*

Falcon 9 Avionics Systems Integration Team. Developed LVDT sensor simulation hardware and software,
Investigated new avionics systems and designed test rack for an avionics subsystem

Research Intern at the French Alternative Energies and Atomic Energy Commission
(Commissariat à l'énergie atomique et aux énergies alternatives) *Saclay, France*

J*uly 2014 - September 2014, Full-time*

Applied formal verification methods to MATLAB/Simulink control code for a human body exoskeleton
Developed a plugin, written in OCaml, for the Frama-C formal verification platform to enable more efficient
verification of computer-generated C codebases

Engineering Intern at University of Virginia Medical School *Charlottesville, VA*

May 2013 - August 2013, Full-time

Rapid prototyping of robotic systems to assist in kidney cell research
Designed and began construction of a robotic cell culture automation system to enable large-scale
population studies on collected cell samples

NASA Langley Research Center Intern *Hampton, VA*

July 2012, Full-time

Built a demo of the Copilot runtime verification system in Haskell on VxWorks 653
Released patch to port the real-time operating system BeRTOS to Atmega 2560 microcontrollers

PROJECTS

Time of flight based indoor localization system (Embedded Sytems Final Project)

Developed indoor localization system based on time of flight ranging from fixed beacons with my team
Designed and built Atmega32U4-based embedded systems to support ultra wide band radio hardware
Designed linear least squares estimation and filtering sytems

Stanford Student Space Initiative

Co-President, January 2015 - January 2016

Co-President of the largest project-based group at Stanford (100+ Members across 5 Teams)
Responsible for the funding and development of three technical teams (satellites, high altitude balloons,
and rockets), organizing speaker events, and building external connections

Founded Optical Communications Project, August 2014 - Present

Led team to succesfully transmitting data by shining a laser over a 10 km distance including design and
construction of a computer-guided laser mount and a fresnel lens receiver
Designed PCBs in Altium for bench-top optical development
Investigating the use of optical communications to increase small satellite downlink bandwidth and decrease
the cost of ground stations, including preliminary STK orbit modeling

Dual Deployment Amateur Rockets Altimeter PCB Design

Designed ARM Cortex M0-based flight computer with altitude sensing for small-scale rockets
Small form-factor (1"x2") PCB designed in Altium, flight code written in C

Stanford Nano Picture Satellite (SNAPS)

Lead team of students to redesign and ship satellite sub-system in under 10 weeks
Miniture satellite (1/4 U) designed to record videos of other satellites during deployment for failure
diagnostics and study of deployment mechanisms
Developed MSP430 code in C for battery and sensor management, designed a new power interface PCB
Passed thermal and vibration testing in preparation for launch in early 2016

MESA Autonomous Sailing Team *Whiff*

Founded and led team that won 1st place in the 1-meter class of the 2013 Sailbot International Robotic
Sailing Regatta
Designed, built, and programmed an entirely custom 1-meter autonomous sailboat
Won 1st place in every autonomous challenge, 1st place presentation, Innovation Award for
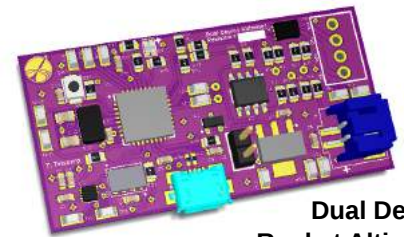3D printed hull, and 1st place overall for the 1-meter class

TECHNIAL SKILLS

Favorite Programming Languages: Python, C, Haskell, MATLAB
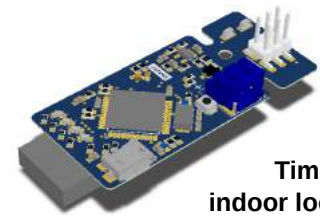Preferred Engineering Tools: Altium Designer, Autodesk Inventor, SolidWorks

**Laser-based
Optical Communications Testing**

**Dual Deploy
Rocket Altimeter**

**SNAPS
Stanford Nano
Picture Satellite**

**Time of flight
indoor localization
hardware platform**

**MESA
Autonomous
Sailing Team
*"Whiff"***