

Fletcher Porter

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Education

University of California, Santa Barbara (UCSB) · Graduation June 2019

- Bachelor's in Mechanical Engineering
- Exchange study from Aug. 2017 to June 2018 at Lunds Tekniska Högskola (LTH) in Lund, Sweden
- Courses in robotic control at UCSB including physics-based modeling
- Course in design with polymer composite materials

Experience

NASA/JPL Internship Robotic Mobility on Icy Moons · 11 June 2018–7 Aug. 2018

- Designed and led the fabrication and assembly of the mechanical and electrical systems for a gravity-offload system (GOS) used to study robotic mobility for future missions to icy moons
- Developed and implemented a control system for the GOS which uses computer vision
- Operated the disaster recovery robot RoboSimian to conduct tests
- Conceived new robotic systems for a sampling system to study soil in Death Valley, California

Hawkes Group and Lockheed Martin Undergraduate Researcher · March 2019–Present

- Developing soft robots for application in aircraft wing inspection
- Developed concepts for wire routing in everting tube robots

NASA/JPL Internship Ocean Worlds Mobility and Sensing · 14 June 2016–26 Aug. 2016

- Designed a level wind for the Deep Subsurface Access (DSA) probe
- Performed testing on DSA drivetrain to verify the design for the larger assembly
- Generated creative ideas for a sample transfer mechanism on the DSA probe
- Designed, built, and tested the actuation for an extensible arm for sampling on Europa

NASA/JPL and UCSB Robotics Lab Internship RoboSimian · June–Aug. 2014, Oct. 2015–May 2016

- Worked in the UCSB robotics lab with Katie Byl
- Designed components for a novel robotic manipulator for RoboSimian
- Rapid prototyped components using a laser cutter and 3D printer to aid iterative design
- Developed roller skates for RoboSimian to significantly increase locomotive speed

Projects

Northrup Grumman and UCSB Automatic Stair Climbing Vehicle · Sept. 2018–June 2019

- Designed, built, and tested a motorized dolly that assists stair climbing while carrying a moderately heavy payload
- Machined most of the not-off-the shelf components by hand with a mill and lathe

Mechatronics Course Design Project Camera Window Cleaning System · Aug. 2017–May 2018

- Designed and built a compressed-air cleaning system for Axis Communications Security cameras

FIRST Tech Challenge Student Robotics Mentor · June 2015–Present

- Teaching high school students engineering design

Publications

B. H. Wilcox, J. A. Carlton, J. M. Jenkins, and F. Porter, "A deep subsurface ice probe for Europa," in 2017 IEEE Aerospace Conference, pp. 1–13, March 2017.

A portfolio of my work can be found at <http://portfolium.com/fporter>