Fletcher Porter

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Education

University of California, Santa Barbara (UCSB) · Graduation August 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