

Fletcher Porter

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Education

University of California, Santa Barbara (UCSB) · Bachelors · Graduated August 2019

- Major 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
- Courses in design with polymer composite materials, batteries, and fuel cells at LTH

Experience

NASA Jet Propulsion Laboratory · Robotics Intern · 11 June 2018–7 Sep. 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 that uses computer vision
- Operated the disaster recovery robot RoboSimian to conduct tests
- Conceived novel robotic systems for a sampling system to study soil in Death Valley, California

Hawkes Group, UCSB · Undergraduate Researcher · March 2019–Sep. 2019

- Developed soft robots for application in aircraft wing inspection
- Designed magnetic tool mounts for soft, vine-like robots
- Developed models for jump height of a carbon fiber-bow jumping robot

NASA Jet Propulsion Laboratory · Robotics Intern · 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 Jet Propulsion Laboratory · Robotics Intern · June–Aug. 2014, Oct. 2015–May 2016

- 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

Capstone Course Design Project (UCSB) · Automatic Stair Climbing Vehicle · Sep. 2018–June 2019

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

Mechatronics Course Design Project (LTH) · Camera Cleaning System · Aug. 2017–May 2018

- Designed and built a lens 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>