

Fletcher Porter

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Education

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

- B.S. in Mechanical Engineering
- Exchange studies from August 2017 to June 2018 at Lunds Tekniska Högskola in Lund, Sweden

Experience

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

- B. H. Wilcox, J. A. Carlton, J. M. Jenkins and F. Porter, “A deep subsurface ice probe for Europa,” 2017 IEEE Aerospace Conference, Big Sky, MT, 2017, pp. 1-13.
- Designed an original concept of a level wind for Deep Subsurface Access (DSA) probe with SolidWorks
- Performed testing on DSA drivetrain to verify the design for the larger assembly
- Provided creative ideas for a sample transfer mechanism on the DSA probe
- Designed, built, and tested the actuation mechanism for the Lander Proximity mechanism
- Managed versions of CAD models using SolidWorks PDM

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

- RoboSimian is the NASA/JPL entry into the DARPA Robotics Challenge, a competition to create a disaster recovery robot
- Designed in SolidWorks mechanical components for a novel robotic manipulator called the Cam Hand
- Rapid prototyped components using a laser cutter and 3-D printer to aid iterative design
- Developed roller skates for the robot to increase locomotive speed from 0.1 m s^{-1} to at least 5 m s^{-1}

Projects

FIRST Tech Challenge Student Robotics Mentor • June 2015–Present

- Teach high school students engineering design process, including ideation, CAD, iteration, and testing

Applied Mechatronics Course Design Project • Aug. 2017–Present

- Design, build, and test a system to give either velocity or position control to a motor, including building a serial connection, an AVR board, and a PI controller.
- Develop a compressed-air cleaning system for a camera window for Axis Communications

Finite Element Method Course Projects • Aug. 2017–Present

- Writing FEM simulation programs in Matlab using the CALFEM package

Computer Music Generation System • Sept.–April 2014

- Wrote a C++ program that produced audio tones by sending signals to the computer's sound card

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>