Fletcher Porter

+1 (626) 321-6687 · me@fletcherporter.com · http://fletcherporter.com · Class of 2019

Education

University of California, Santa Barbara (UCSB) · BS Mechanical Engineering · Graduated 2019-08
- Exchange study from 2017-08 to 2018-06 at Lunds Tekniska Högskola (LTH) in Lund, Sweden
- Courses in design with polymer composite materials, batteries, and fuel cells at LTH

Experience

NASA Jet Propulsion Laboratory · Gravity-Offload System · 2018-06-11 – 2018-09-07
- Developed a system to study robotic mobility for missions to icy moons
- Designed in CAD a mechanical system to offload gravity with minimal lateral forces
- Made engineering drawings of mechanical components to send to vendors to machine
- Designed an electrical system to distribute power to microprocessors that control the system
- Assembled the mechanical and electrical systems by hand
- Wrote automatic control programs with documentation in Python and Arduino C

Hawkes Group, UCSB · Vine Robots · 2019-03 – 2019-09
- Iteratively designed in SolidWorks a fixture to hold tools on the end of a soft, vine-like robot
- Built these fixtures by making them on a 3D printer and assembling them
- Documented design process and results

Capstone Course Design Project (UCSB) · Automatic Stair Climbing Vehicle · 2018-09 – 2019-06
- Designed in SolidWorks a dolly that climbs stairs while carrying a heavy payload
- Created manufacturing drawing of all custom components in the system
- Machined most custom components by hand on a mill and lathe
- Reported the design process and results

NASA Jet Propulsion Laboratory · Ocean Worlds Mobility and Sensing · 2016-06-14 – 2016-08-26
- Developed a proposal for a probe to bore ~20 km into Europa's icy crust
- Designed components to demonstrate the feasibility of the proposed system
- Performed a test with a robot arm to demonstrate the proposed boring method
- Created drawings for parts to manufacture and to get ROM quotes

Mechatronics Course Design Project (LTH) · Camera Cleaning System · 2017-08-28 – 2018-05-15
- Designed and built a mechanical system for cleaning security cameras
- Documented the design process and results in a report

NASA Jet Propulsion Laboratory · RoboSimian Cam Hand · 2014-06-09 – 2014-08-12
- Designed components of a robot manipulator in SolidWorks and iterated on the design

Robotic Planning and Kinematics Class · UCSB ME 179P · 2019-01-07 – 2018-03-19
- Wrote planning and kinematics programs in Python
- Documented code with Python docstrings

Robotic Controls Class · UCSB ME 179D · 2018-09-27 – 2018-12-11
- Wrote control programs for robot arms in Matlab and Simulink

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/portfolio