Fletcher Porter

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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

Certified SolidWorks Associate (CSWA) · 2020-01-23

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
- Coauthored "A deep subsurface ice probe for Europa" in IEEE Aerospace Conference 2017

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

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