Fletcher Porter

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Education

University of California, Santa Barbara (UCSB) · BS Mechanical Engineering · Sept. 2019
- 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

Certified SolidWorks Associate (CSWA) · Jan. 2020

Experience

Tetra Bio Distributed · Engineer, Board Secretary · April 2020 – Present
- Developing a software display to show respiration descriptors of COVID-19 patients to doctors
- Designed a web server to send patient data to a browser front end using Python and Go
- Wrote drivers for a pressure and a flow sensor for an embedded system
- Made signal processing tools to turn sensor data into patient state descriptors useful to doctors
- Prepared and submitted IRS Form 1023-EZ to get the organization 501(c)3 non-profit status

NASA Jet Propulsion Laboratory · Robotics Intern · June 2018 – Sept. 2018
- 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 · Undergraduate Researcher · March 2019 – Sept. 2019
- Iteratively designed in CAD 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) · Student Engineer · Sept. 2018 – June 2019
- Designed in CAD 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 · Robotics Intern · June 2016 – Aug. 2016
- 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) · Student Engineer · Aug. 2017 – May 2018
- Designed and built a mechanical system for cleaning security cameras
- Documented the design process and results in a report

NASA Jet Propulsion Laboratory · Robotics Intern · June 2014 – Aug. 2014
- Designed components of a robot manipulator in CAD and iterated on the design

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