

Fletcher Porter

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I'm a jack-of-all-trades engineer with particular skill in mechanical design and software development. I love to get my hands dirty in every piece of a system. I find joy in having a broad understanding of everything and intimate knowledge of a few things I get to own.

Education

Aalto University · MS Mechanical Engineering · Expected June 2024

- Specializing in Mechatronics

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

- Exchange study in 2017-2018 at Lunds Tekniska Högskola (LTH) in Lund, Sweden
- Courses in robotics, design with polymer composite materials, batteries, and fuel cells

English · Native speaker **Finnish** · A2

Certified SolidWorks Associate (CSWA) · Jan. 2020

Experience

Aalto Fluid Power Lab · Research Assistant · Oct. 2022 – Present

- Developed control systems for industrial hydraulics with Beckhoff TwinCAT
- Integrated CAN and EtherCAT buses into a single system
- Developed communication with external software with TCP sockets
- Designing a shaft to integrate an ABB motor into an industrial hydraulic system

Oblong Inc. · Software Developer · Dec. 2020 – March 2022

- Qualified new hardware for a complex, embedded, multimedia, hardware/software device
- Debugged audio issue involving Linux, PulseAudio, Cisco hardware, and Oblong's hardware
- Developed polyglot software in Python, Go, Bash, C++, C, Ruby, JavaScript, and TypeScript

Tetra Bio Distributed · Software Engineer, Board Secretary · April 2020 – Jan. 2021

- Developed a **software display** to show respiration descriptors of COVID-19 patients to doctors
- Wrote drivers for a pressure and a flow sensor for an embedded Linux system
- Made signal processing tools to turn sensor data into patient state descriptors useful to doctors

NASA Jet Propulsion Laboratory · Robotics Intern · Summers 2018, 2016, and 2014

- 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
- Prepared engineering drawings of mechanical components to send to vendors to machine
- Designed an electrical system to distribute power to microprocessors that control the system
- Wrote automatic control programs and documentation in Python and Arduino C
- Developed a proposal for a **probe to bore ~20 km into Europa's icy crust**
- Co-authored "**A deep subsurface ice probe for Europa**" in IEEE Aerospace Conference 2017

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

Capstone Course Design Project, UCSB · Student Engineer · Sept. 2018 – June 2019

- Designed in SolidWorks from requirements a **stair-climbing dolly** that carries heavy payloads
- Machined most custom components by hand on a mill and lathe from drawings I made

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