# Schuyler Ryan

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## SKILLS

**Hands on:** Machining, Metal Casting, Welding, Electronics equipment, Machine Shop equipment, Vibrations lab equipment, Fluids lab equipment, Material Science lab equipment
**Software:** SolidWorks, Abaqus, Fusion360, Microsoft Word, PowerPoint, Excel, MATLAB, Python, MicroPython, Assembly, Java, C, UNIX, EES, Simulink, HTML, JavaScript, Colab, RSLogix 5000

## WORK EXPERIENCE

**Second Order Effects** | Electrical Engineer | Jan 2022 - April 2024
- Developed design architectures, trade studies and requirements documentation to map customer ideas to initial board designs
- Executed schematic capture and circuit layout with Altium
- Created verification and validation test plans
- Completed bring-up testing, reworking, and Engineering Change Order generation
- Maintained requirements and design documentation through multiple design revisions
- Performed functional, environmental, safety, and acceptance testing, utilizing custom test automation and data logging software

## ENGINEERING PROJECTS

**Supersonic Jet Landing Gear Electronics Acceptance Test Campaign**
- Designed test system to capture continuous current measurements of all input and output FPGA signals
- Visualized and parsed test data with custom Python script
- Carried out exhaustive HDL simulation testing of FPGA inputs/outputs
- Performed functional hardware testing in various thermal environments

**Battery Management Controller and Power Conversion Controller MTBF Analysis**
- Conducted Mean Time Between Failure (MTBF) analysis on BMC and PCC for battery generator
- Developed MTBF training material for the systems engineering team within the company

**Satellite Design Program "IP Cores"**
- Architected a system to pipe user input parameters describing a satellite mission into discrete code blocks representing satellite subsystems, and pass outputs into other subsystems iteratively
- Combined mechanical knowledge and Python to write analysis and calculation functions to generate outputs for Thermal, Structures, Power, GNC, and Propulsion subsystems

**NASA RASC-AL 2021 Moon to Mars Ice & Prospecting Challenge (Award-Winning National Finalists)**
- Led year-long engineering project to develop an autonomous drilling system to extract ice from Lunar and Martian ice shelves and collect soil hardness data
- Worked with MSP432 microcontroller to improve skills in creating finite state machines and developing software to control I/O devices in C
- Awarded "Most Accurate Digital Core" for most accurately mapping soil density profile, combining load cell and z-axis drill encoder data
- Wrote multiple detailed design reports to secure NASA grant funding

## EDUCATION

**California Polytechnic State University, San Luis Obispo** | Sep 2016 - Dec 2021
*B.S. in Mechanical Engineering: Mechatronics Concentration*
*Minor in Computer Science*
**Coursework:** Data Structures, Systems Programming, Computer Organization, Operating Systems, Artificial Intelligence, Electronics, Robotics, Control Systems, System Dynamics, Manufacturing Automation