Schuyler Ryan

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EDUCATION

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

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
- **Traits:** Leader, Quick Learner, Passionate, Problem Solver, Analytical, Disciplined, Detail Oriented

ENGINEERING PROJECTS

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
- Wrote multiple detailed design reports to secure grant funding
- Implemented formal engineering design process including ideation, prototyping, manufacturing, and testing

Supersonic Jet Landing Gear Electronics Acceptance Test Campaign
- Designed test system to capture continuous current measurements of all input and output FPGA signals, and visualized and parsed test data with custom python script
- Carried out exhaustive testing of FPGA inputs/outputs in simulation
- 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

Mechatronics SUMO-Bot Competition
- Led term-long project to create autonomous robot to compete with student peers
- Gained expertise creating tasks and finite state machines in MicroPython
- Worked with STM32 Nucleo and furthered experience with electrical components and equipment

Moon Lander Q-Learning Agent
- Worked with python to create a reinforcement learning agent that adapts the optimal policy for landing a moon lander without crashing
- Formulated a Q-function to map action-state pairs with utility values
- Adjusted parameters such as learning rate, discount rate, and state reward values

WORK EXPERIENCE AND LEADERSHIP

Second Order Effects | Electrical Engineer

Patriot Gold and Silver | Assistant Manager

Redding Youth Organization | President

Cal Poly SLOverwatch | President