Karsen Burson

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EDUCATION

Oregon State University   Corvallis, OR
Bachelor of Science: Electrical and Computer Engineering,   *June 2021*
   Emphasis in Robotics, Minor in Computer Science   *GPA: 3.2*

TECHNICAL SKILLS

Overall Skills: Analog and Digital Signal Analysis, Integrated Circuit Design, PCB Design, Control Systems, Computer Networking
Languages: Assembly, Vim script, SystemVerilog, LabVIEW, MATLAB, Python, C/C++, Java, Go, LaTeX
Hardware: National Instruments, FPGA, Atmega, Teensy, Arduino, XBee
Development: Atmel Studio, Arduino IDE, Visual Studio, Digi XCTU
Software: SolidWorks, AutoCAD, LTspice, KiCad, Simulink, ModelSim
Operating Systems: Windows, Mac (OSX), Linux (Ubuntu)

EXPERIENCE AND RESEARCH

Lead Test Stand Control Development Engineer   March 2020 – Present
Oregon State University Propulsion Laboratory - Liquid Rocket Engine Test Stand   *Corvallis, OR*
- Designed, programmed, and tested the data acquisition and control system.
- Supported propulsion team during: system testing with control system, sensor calibration, and analysis of data.
- Reviewed planning documents P&ID's for hardware integration and processes into the control software.
- Performed system-level performance evaluations and incorporated findings into control system design.
- Generated testing operations and procedures.
- Manufactured sub-component signal conditioning circuitry.

Avionics Sub-Team Lead   August 2018 – Present
Oregon State University - HALE   *Corvallis, OR*
- Defined component and system requirements and interfaces for flight vehicle engine control unit.
- Simplified methods for users implementing new sensors or mission-critical applications for the flight vehicle.
- Established simulation and testing procedures for the flight vehicle engine control software.

PROJECTS

HALE Controls | *Python, LabVIEW*   Sept. 2020 – Present
- Developed/implemented Data Acquisition and Control system for propulsion laboratory testing apparatus via LabVIEW and Python.
- Identified architectural improvements, resulting in increased code efficiency, product reliability, and responsiveness from 7.5 Hz to 25 Hz.
- Collaborated with the graduate propulsion team to implement automation sequences, control functions, and timing for pressurized systems.
- Improved testing operations with the addition of improved functional and aesthetic GUI features.

Sumo Robot | *SolidWorks, Teensy, 3D printing, PCB design*   Sept. 2019 – March 2020
- Created a 10cm x 10cm Chassis for a Mini Sumo Robot using SolidWorks
- 3D printed and assembled the enclosure for the components of the Sumo Robot
- Designed a printed circuit board and integrated with teensy3.6 shield for all components to connect
- Tested components and iterated on chassis design

SERVICE

American Institute of Aeronautics and Astronautics (AIAA) — Member   Oct. 2018 – Present
The Institute of Electrical and Electronics Engineers (IEEE) — Member   Nov. 2019 – Present
High Altitude Liquid Engine (HALE) — Team Member   August 2018 – Present