Greg Emmen

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EXPERIENCE

Software & Controls Engineer
GM Defense | Milford MI | September 2021 - Present

- Rapid prototyping of novel control systems for military vehicles
- Develop software solutions to meet customer specifications
- Support team in pursuit of defense contracts and opportunities

Controls Design Engineer
General Motors | Milford MI | December 2018 - September 2021

- Led a cross-functional team to deploy HV propulsion and safety features
- Developed software and algorithms to meet or exceed system requirements
- Coordinated unit and behavioral testing of software with global team

Plant Modeling & HIL Integration Engineer
General Motors | Milford MI | June 2015 - December 2018

- Technical expert on the implementation of software to HIL benches
- Built plant models to simulate functionality not available through hardware
- Managed multiple HIL benches to meet customer requirements for testing

Facilities Engineering Intern
Cummins Inc | Columbus IN | June 2014 - August 2014

- Assisted implementing an ISO 50001 energy management system
- Provided troubleshooting support for failures in air handler units on test cell

PROJECTS

Regenerative Braking Control of a Brushless DC Motor Drive
Fall 2021

- Model built using MATLAB/Simulink for basic vehicle energy and dynamics
- Testing of modified six-switch inverter strategy for brake torque and regen
- Analyzed permutations of method to quantify the effect of the strategy

Satellite Attitude Control Model
Fall 2020

- Specify set of equations to govern movement of a rigid body in zero-gravity
- Developed Simulink model for attitude control system on a satellite

CSU EcoCAR3 Controls Team, year one of competition
Fall 2010 - Spring 2011

- Built the initial controls architecture
- Selected hardware for controls development on hybrid Chevrolet Camaro
- Supported HV battery design and testing capability

EDUCATION

MSE in Energy Systems Engineering
University of Michigan - Dearborn
2019 – 2021

BS in Mechanical Engineering
Colorado State University
2011 - 2015

TECHNICAL SKILLS

- Vehicle data acquisition & analysis
  - ETAS tools (MDA, INCA)
  - Vehicle Spy
  - neoVI HW
- Vehicle Communication
  - CAN/CANFD
  - J1939
- Rapid prototyping
  - dSPACE HW & SW
  - New Eagle HW & SW
- Automated software testing
- Version Control
  - GIT
  - Github
- MATLAB/Simulink
- Python
- C++