Braden Eichmeier

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Education:

Carnegie Mellon University – School of Computer Science   Pittsburgh, PA
Master of Science in Robotic Systems Development | GPA: 4.08/4.00   May 2021

Utah State University   Logan, UT
Bachelor of Science in Mechanical Engineering | GPA: 3.99/4.00   May 2019

Experience:

Autonomous Solutions Inc.   Logan, UT
GN&C Intern   May 2020 – August 2020

- Developed algorithms for image processing and feature detection for neuromorphic cameras
- Formulated and prototyped event-visual-inertial localization pipeline for autonomous vehicles
- Customized simulation environment using Blender to resemble real-world testing facilities

Hill Air Force Base   Ogden, UT
F-16 Process Engineer   May 2018 – July 2019

- Reverse engineered antiquated equipment to enhance workflow of F-16 depot maintenance procedures
- Interfaced with repair technicians to add new design features on next-generation equipment
- Brainstormed modern aircraft work stands and presented proposed dock arrangement to leadership

Utah Power Electronics Lab   Logan, UT
Research Assistant   August 2017 - May 2019

- Conceptualized casing and heat transfer for medium voltage AC unfolder and DC-DC converter
- Retrofitted jet engine testing facility, to accommodate destructive battery and other explosive testing
- Developed a carrying case for a 30-cell active balancing battery pack for a military customer
- Fabricated testing fixtures to facilitate research for wireless power transfer to electric vehicles

Projects:

MRSD Final Project   Carnegie Mellon University | August 2019 - May 2020

- Augment DJI M600 drone with an Autonomous Airborne Collision Avoidance System (AACAS)
- Create simulation environments in MATLAB and Gazebo (ROS) to iterate local avoidance planner
- Design local planning algorithm using a potential field approach to reactively avoid dynamic obstacles

Autonomous Vehicle Competition Team   Utah State University | January 2018 - May 2019

- Collaborated with small team on an autonomous car for Sparkfun's Autonomous Vehicle Competition
- Implemented a go-to-goal controller with LQR optimization in MATLAB
- Visualized the vehicle in RVIZ for simulations using URDF files derived from SolidWorks models
- Upgraded SLAM capabilities of the vehicle with Google Cartographer and a TIM551 LiDAR

Mobile Active Threat Emergency System   Utah State University | September 2018 - May 2019

- Improved first responder communication during rapidly developing emergencies (i.e. active shootings)
- Utilized GPS, camera, and borescope data to increase situational awareness in responders and leadership
- Deployed IoT platform using ThingWorx to connect 4 operators and 11 devices in a training exercise

Skills/Competencies:

Programming Languages: Python, C++, MATLAB
Robotics: ROS, State Space Control, Motion Planning, RVIZ, Computer Vision, URDF
Machine Learning: Neural Networks, CNNs, SVMs, Reinforcement Learning