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

Hill Air Force Base - 309 SWEG/SABER — Ogden, UT
Staff Software Engineer — August 2024 – Current

- Oversee 20+ engineers in a 5-team collaboration to process exquisite RF data in a cloud-native application
- Implement the transition of a cloud-based (3+ PB) radar data product to an on-premise solution
- Mentor young team lead in the design, planning, and execution of an OMS/UCI data product
- Create onboarding and training plan for modern Python and C++ to grow team while maintaining culture

Lead Software Engineer — July 2023 – August 2024

- Lead a team of 10+ to develop a product to ingest and serve MIL-STD-1553 data from ∼3000 F-16 test flights
- Designed adaptable Python API for developing data products within a defense-centric enterprise data mesh
- Authored white paper on best practices and future directions for predictive maintenance in the Air Force

F-16 Simulation Engineer — June 2021 – July 2023

- Simulated environment interactions and MIL-STD-1553 bus traffic for ASQ-236 RPOD and APG-83 AESA
- Maintained high-fidelity C++ simulator to support F-16 Block 30 operational flight program development
- Pioneered simulation abstraction design to reduce effort duplication between 3 large simulation teams

DAF-MIT AIA Phantom Fellowship — Boston, MA
Phantom Fellow — November 2022 – March 2023

- Published extended abstract to HPEC 2023 of data modernization and AI/ML opportunities at Hill AFB
- Won "Best Use of AI/ML" in a team of 8 at the Bravo10 Hackathon event over 400 other hackers
- Researched adversarial robustness training and perturbation pipelines for image classification models
- Conducted domain shift analysis to validate model robustness between different training procedures

ProtoInnovations, LLC — Pittsburgh, PA
Independent Consultant — January 2021 – May 2021

- Researched risk analysis frameworks and mitigation techniques for the mobility system of planetary rovers
- Synthesized fault tree and failure modes effect analysis guide planning and selection of future rover missions
- Quantified the likelihood and uncertainty of degraded rover performance using empirical analysis

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

- Prototyped event-visual-inertial localization pipeline for autonomous vehicles
- Perceived image stream with classical feature detection, tracking, and 3D reconstruction techniques
- Optimized SLAM factor graph using self-implemented factors optimized by Ceres Solver
- Customized simulation environment using Blender and RVIZ to resemble real-world testing facilities

SKILLS/COMPETENCIES

Programming Languages: Python, C++
SLAM: Sensor Fusion, Geometric Vision, 3D Reconstruction, Feature Detection/Tracking, Factor Graphs
Machine Learning: Neural Networks, CNNs, SVMs, Reinforcement Learning
Data Engineering: FastAPI, Prefect, Argo Workflows, Docker, Kubernetes, MongoDB, PostgreSQL