MARSHALL P. JOHNSON

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EDUCATION

Northwestern University — Evanston, IL
Master of Science in Robotics (Expected Graduation: August 2022) — Sept 2021 - Present

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Bachelor of Science in Mechanical Engineering — Sept 2013 - June 2017

WORK EXPERIENCE

Crusoe Energy Systems — Denver, CO (Remote)
Data Science Intern — Jun 2021 - Sept 2021

- Built custom Grafana dashboards to visualize real-time operational and financial metrics, facilitating decision-making and reporting
- Analyzed environmental data to prioritize expansion targets for business development

The Okoa Project — Boston, MA (Remote)
Data Scientist — Mar 2020 - Jun 2021

- Leveraged ambulance data to generate real-time visualizations using Python and Tableau
- Built custom Flask dashboards to better inform stakeholders and direct future innovation
- Created in-house data pipeline for GPS data obtained from Okoa ambulances in Africa

Booz Allen Hamilton — Washington, D.C.
Senior Consultant — Aug 2017 - Jun 2019

- Provided modeling expertise (Python) and data strategy for client to enhance technical solutions and processes, resulting in reduced error and improved data analysis
- Developed Python software to run agent-based simulations for a variety of applications, resulting in a new modeling capability for Booz Allen team

PROJECTS

Classification of User-specific Symbols for Intuitive Control Using CNN — Evanston, IL
Final Project (MS in Robotics); Advisors: Matthew Elwin, PhD & Ola Kalinowska — Jun 2022 - Present

- Built curriculum of maze simulations using ROS and Gazebo to gather analog data from users for machine learning pipeline
- Classifying user inputs into custom symbols using 1D CNN (Keras) to generate an intuitive, user-specific set of controls that can be used to navigate in the real world

Feature-Based Extended Kalman Filter SLAM from Scratch — Evanston, IL
Sensing, Navigation, and Machine Learning for Robotics (MS in Robotics) — Jan 2022 - Mar 2022

- Performed circular regression and classification to detect landmarks from LiDAR data
- Implemented EKF-SLAM through self-developed ROS C++ package
- Built simulated environment in RViz from scratch, including robot control (collision detection, differential drive kinematics, and odometry)

LEADERSHIP

Product Engineering Processes — Cambridge, MA
Team Leader — Sept 2016 - Dec 2016

- Led a team of seventeen MIT students through early phases of product development, culminating in the construction of a high quality functioning alpha prototype
- Presented working alpha prototype to a live audience of ~1300 people

SKILLS & SOFTWARE

Machine Learning	Keras / TensorFlow / PyTorch	Python	C++ / C
Data Visualization / Dashboarding	Linux	SQL	ROS
Modeling & Simulation	Version Control (Git)	Tableau	Gazebo