Dominic Mazza

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GitHub | LinkedIn | Website

Objective

Pursuing admission in a doctorate program with a concentration in robotics engineering. Offering relevant experience in industry standard robotics tools and computer vision frameworks with an emphasis on team leadership, large project development, and the education of new engineers in the field.

Skills

Software Stack – Python, C++, ROS, Pytorch, and Tensorflow
Leadership – Project Management, Documentation Generation, Infrastructure Development and Resource Procurement
Education – Tutorial Creation and Workshop Development

Education

Bachelor of Engineering, Computer Science; minor in Linguistics — **Michigan State University**
May 2023 — GPA: 3.66

Honors

Dean's List — *Fall 2020, Fall 2021, Spring 2022*
MSU Professorial Assistantship — *Fall 2019, Spring 2020, Fall 2020, Spring 2021*
MSU EnSURE Scholar — *Summer 2020*
Honors College Scholarship — *Summer 2019*
Non-Resident Scholarship — *Summer 2019*
Red Cedar Scholarship — *Summer 2019*

Experience

MSU AVC (Autonomous Vehicle Club) – *Project Lead* — *08/2021 - Present*

- Leading multiple sub-teams of undergraduate researchers using CI/CD, Kanban boards, and communication platforms to ensure rapid development of software
- Responsible for maintaining software for an autonomous system, using knowledge of ROS, C++, and Python for process improvement and to minimize technical debt accrued over the past years of the program
- Facilitating workshops and developed tutorials in efforts to educate new organization members and kickstart their development in ROS on the autonomous vehicle

Perception Team Lead, Professorial Assistant — *08/2020 – 06/2021*

- Devising a CPU-based computer vision pipeline by using model optimizations and CPU libraries to facilitate 2D object detection in the AutoDrive competition

- Leading a team of undergraduate engineers in their efforts to develop the above pipeline by effectively dividing our labor into manageable deliverables

Professorial Assistant *08/2019 – 05/2020*

- Developing skills for vehicle path planning, mapping, and object avoidance by learning in an active development environment to aid in performance in the Auto Drive competition

MSU CANVAS – *Student Researcher* *Summer 2021 / 2022*

- Working on an active research project utilizing skills in Pytorch and Python to assist in the development of the CLOCs sensor fusion technique between LiDAR and Camera computer vision networks
- Extracting sensor fusion technique by isolating project specific code from a larger repository to develop a modular deployment of the technique
- Developing skills in dependency analysis, compilation troubleshooting, and computer vision techniques by learning from PhD candidates to aid in a personal understanding of their academic research

MSU EnSURE – *EnSURE Student Researcher* *05/2020 – 08/2020*

- Developing a working model of vehicle geometry, sensors, and transforms to simulate vehicle systems in the CARLA open-source simulator
- Testing vehicle model and path-planning systems by integrating vehicle's ROS system with the CARLA simulator

Projects

MSU Capstone Experience Fall 2022

- Implementing a ROS architecture to facilitate the real-time fusion of stereo-image data and LiDAR data in a system designed for Lockheed Martin Space's Lunar Mobility Vehicle platform
- Working with a team of senior engineers to divide work into discrete components to ensure on-time delivery of an enterprise software package

Personal Organization Overhaul *Summer 2022*

- Developing a system to organize academic, professional, and personal information in a cohesive fashion by creating a notion system to centralize personal knowledge base
- Modifying the GTD (Getting Things Done) schema for my own task management using the Things 3 application, and bolstered efficiency by configuring API calls using apple shortcuts

MNIST in Rust *Summer 2022*

- Implementing a linear algebra based gradient descent algorithm by using Rust's ndarray package to garner detections on the MNIST handwritten digits dataset
- Strengthening general programming skills by developing a system in an unfamiliar domain with an unfamiliar programming language