

MATTHEW S. EULIANO

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Education

Master of Science, Robotics

Northeastern University, Boston, MA

Expected December 2023

GPA: 4.0

Relevant Courses: Sensing & Navigation, Control Systems Engineering, Intro to Machine Learning

Bachelor of Science, Mechanical Engineering

Virginia Polytechnic Institute & State University, Blacksburg, VA

May 2019

GPA: 3.63

Work Experience

Systems Integration Engineer

July 2020 - December 2021

L3Harris Unmanned Systems, Ashburn, VA

- Tested small jet engines inclusive of ground testing, control systems, in-air flight testing, performance analysis, and system integration deploying LabVIEW and MATLAB tools
- Performed power system characterization, wing deployment design, mechanical verification testing, hardware/software-in-the-loop testing, and final system acceptance testing

Assoc. Integration and Test Engineer

July 2019 - July 2020

L3Harris Mission Systems, Herndon, VA

- Initiated an automated procedure for generating and analyzing Radar Tuning parameters and Performance metrics in MATLAB to support Radar Realignment to True North for the FAA

Academic Projects

Stretch Robot Mapping and Navigation, Northeastern RiVeR Lab

February 2022 - present

- Integrated mapping, localization, and navigation functionality for the Stretch RE1 Robot based on the Timed-Elastic Band (teb) local planner using the on-board laser-scanner and RGB-D camera
- Created a Python script to perform human-following behavior using ROS and Gazebo simulation

Visual-Inertial SLAM on NUance car, Northeastern Course Project

March 2022 – April 2022

- Utilized the Northeastern Autonomous Car (NUance) to create a dataset consisting of stereo cameras and IMU measurements through Boston streets
- Performed stereo-visual-inertial SLAM using the ORB-SLAM3 algorithm
- Integrated with ROS for Nav-Stack EKF comparison analysis and loop-closure visualization

Navigation Stack Creation, Northeastern Course Project

January 2022 – March 2022

- Created Python drivers and performed sensor calibration for a GNSS puck and VN-100 IMU
- Developed a sensor fusion algorithm to filter and combine GPS data with the IMU dead-reckoning estimate to improve localization
- Instrumented a car with the nav-stack and collected data for error analysis using ROS and MATLAB

Electronic Limited-Slip Differential, Virginia Tech Baja SAE

January 2018 - May 2019

- Led vehicle sensor instrumentation and created an Electronic Control Unit (ECU) to fuse sensor information and actuate clutch packs based on a calculated desired torque distribution using an Arduino microcontroller

Skills

- Programming: Python, Arduino, Linux, Git
- Engineering Software: MATLAB, ROS, LabVIEW, Simulink
- CAD/CAM: SolidWorks, Creo Parametric, Nx11, Autodesk Fusion360