MATTHEW S. EULIANO

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Education

Master of Science, Robotics
Northeastern University, Boston, MA — Expected December 2023

Bachelor of Science, Mechanical Engineering
Virginia Polytechnic Institute & State University, Blacksburg, VA — May 2019
GPA: 3.63

Work Experience

Systems Integration Engineer, L3Harris — July 2020 - December 2021

- 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, L3Harris — July 2019 - July 2020

- 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

- Developed mapping, localization, and navigation functionality for the Stretch Robot based on the Timed-Elastic Band (teb) local planner using the on-board Lidar sensor and RGB-D camera.
- Sensor fusion and implementation were performed using the Robotic Operating System (ROS)

Navigation Stack Creation, Northeastern Course Project — February 2022 – April 2022

- Collected and analyzed driving data using a created navigation stack consisting of GNSS puck and VN-100 IMU, including Python drivers, sensor calibration, sensor fusion in ROS, and error analysis

Visual-Inertial SLAM through Tunnels, Northeastern Course Project — March 2022 - present

- Utilized the Northeastern Autonomous Car to generate a dataset using stereo cameras and IMU measurements through Boston tunnels with mapping, localization, and loop closures performed by the ORB-SLAM3 algorithm.

Robotic Eyes, Personal Project — August 2021 - November 2021

- Modeled and 3D-printed robotic eyes using SolidWorks and actuated using servomotors and a series of mechanical linkages
- Leveraged Raspberry Pi, webcam, and OpenCV Python tools to detect and track human faces

Electronic Limited-Slip Differential, Virginia Tech Baja SAE — January 2018 - May 2019

- Headed vehicle instrumentation to sense road conditions and driving characteristics leveraging IMU, GPS, Hall-Effect sensors, and a linear actuator
- Devised an Electronic Control Unit (ECU) to fuse sensor data and actuate clutch packs based on a calculated desired torque distribution using an Arduino microcontroller

Unreal Engine 4 Virtual Reality Experience, Personal Project — February 2018 - October 2018

- Designed and developed a Virtual Reality experience operating in C++ for Oculus platform

Skills

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