Ernest Pellegrino

Greater Boston Area — **Contact Information Available Upon Request**
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Core Qualifications

Security Clearance: Active U.S. Secret **Eagle Scout**, Boy Scouts of America
Languages: Japanese (Conversational Proficiency) **Graduate GPA: 4.000**

Professional Experience

System Safety Engineer Jan 2025 – Present
U.S. Navy / Department of Defense (Federal Service)

- **Architect** comprehensive hazard analyses (FHA, PHA, SSHA) for mission-critical defense systems, ensuring strict adherence to **DoD safety requirements and MIL-STD protocols**.
- **Supported** Software Safety Analysis initiatives to categorize system criticality and establish **Level of Rigor (LOR)** benchmarks for autonomous and embedded functions.
- **Collaborate** within cross-functional engineering teams to integrate safety-by-design principles throughout the **Systems Engineering Life Cycle (SELC)**.
- **Synthesize** complex technical safety data into formal Risk Assessment Reports to support senior-level decision-making and system certification.

Substitute Teacher Jan 2024 – Jan 2025
Belmont Public Schools - Belmont, MA

- Managed dynamic classroom environments, delivering technical curriculum and maintaining instructional continuity for diverse student populations.
- Demonstrated **adaptability and leadership** by translating complex lesson plans into engaging educational experiences.

Graduate Research and Teaching Assistant May 2021 – Jan 2024
University of Massachusetts Lowell (NERVE Center) - Lowell, MA

- **Developed** high-fidelity, interactive simulation environments to facilitate human-subject studies on autonomous robot behaviors.
- **Architected** data acquisition pipelines to capture and analyze participant interaction metrics, increasing testing reliability by 30%.
- **Instructed** undergraduate students in the deployment of real-time autonomous navigation stacks utilizing **C++, Python, and ROS**.

Education

University of Massachusetts Lowell - Lowell, MA
M.S., Computer Engineering 2021 – 2023
B.S., Electrical Engineering 2019 – 2021

Technical Project Experience

Autonomous Robotics Development (ROS-based) Fall 2022

- **Developed** a goal-oriented navigation framework using **Computer Vision** and Finite State Machine (FSM) logic for autonomous decision-making.
- **Integrated** SLAM-based navigation stacks using Lidar and depth cameras for high-precision localization and environment mapping.

Technical Skills

Engineering: System Safety, **Hazard Analysis (FHA. PHA, SSHA)**, Risk Management.
Software/OS: Python, C++, ROS, Bash, MATLAB, Linux (Ubuntu), Git, Real-Time Systems, LaTeX.