

# ROBERT D'ANTONIO

[robbie.dantonio@gmail.com](mailto:robbie.dantonio@gmail.com) | 508-918-8744 | Boston, MA | [www.linkedin.com/in/robertdantonio](https://www.linkedin.com/in/robertdantonio) / [www.github.com/robbiedantonio](https://www.github.com/robbiedantonio)

## EDUCATION

**Northeastern University, Boston, MA** | M.S. in Electrical and Computer Engineering

*Expected May 2026*

- Concentration in Hardware and Software for Machine Intelligence

**Boston University, Boston, MA** | B.S. in Computer Engineering

*Graduated May 2024*

## TECHNICAL SKILLS/TOOLS

C, C++, SystemC, Verilog, Python, Java, ReactJS, Spring Boot, PyTorch, gem5, Wireshark, RISCv, x86, MATLAB

## SELECTED PROJECTS

**The Charles Stark Draper Laboratory - Simultaneous Localization and Mapping (SLAM) for Underwater Robots**

- Developed a novel localization technique for underwater robots based on the SLAM algorithm.
- Designed and implemented methods for classifying and locating landmarks on the seabed from sonar data.
- Wrote simulation scripts to generate sonar data using the HoloOcean underwater simulation package.

**Modeling a Hardware Implementation of the Vision Transformer**

- Implemented the Vision Transformer (ViT) deep image classification model in C++.
- Employed SystemC to model different methods of implementing a ViT hardware accelerator.

**Logic Minimization/FPGA Simulation Tool**

- Engineered and implemented a configurable Field Programmable Gate Array (FPGA) simulator in Python that minimizes, maps, and evaluates logic expressions.

**Image Processing on the Nexys-7 FPGA**

- Developed a configuration for the Nexys-7 FPGA that takes camera input, performs a selected transformation or encryption algorithm on the camera image, and outputs the modified image via the board's VGA connection.
- Designed and wrote the top-level Verilog module, as well as modules to drive the camera input and VGA port.

## WORK EXPERIENCE

**Graduate Researcher** | Northeastern University Embedded Systems Lab, Boston, MA

*2025 – present*

- Design, model, implement, and evaluate different domain-specific computing systems using SystemC.

**Associate Engineer Systems** | Northrop Grumman, Middletown, RI

*2024 – present*

- Support the Naval Undersea Warfare Center's efforts to modernize their simulation systems, moving from a monolithic architecture to a containerized, microservice-based application.
- Develop full-stack applications using Java, ReactJS, Cypher, and other tools in an agile environment.
- Participate in all aspects of the SW life cycle, including design, development, DevOps, testing, and deployment.

**Teaching Assistant** | Boston University, Boston, MA

*2023 – 2024*

- Worked as a teaching assistant for undergraduate courses in Computer Organization (2 semesters) and Intro to Machine Learning, and for a graduate level course in Deep Learning.
- Instructed students in writing, debugging, and testing PyTorch, Python, Verilog, MIPS assembly, and C code.
- Updated homework assignments with new questions on topics including: 1. Mathematical derivation of lasso linear regression, 2. K-nearest-neighbors, 3. MLPs/PyTorch tutorial, and 4. Implementation of neural network layers from scratch, including mathematical derivations and comparisons with PyTorch.
- Evaluated students' Verilog code, test cases, and Vivado waveform simulations in the mandatory demonstration portion of their weekly lab assignments.

**IT Support Intern** | The MathWorks, Natick, MA

*Summer 2022*

- Resolved technical issues with hardware, software, and networking for a 5,000-person organization.
- Built and deployed new machines with MathWorks-specific Windows, Linux, and Mac images.
- Connected and collaborated with other MathWorks teams to resolve issues outside my existing knowledge.

## LEADERSHIP

**Electrical Sub-team Lead** | Boston University SAE Baja Team

*2022-2024*

- Led team of four in the development of an Arduino-based dashboard, telemetry, and communication system.

**Co-founder, Executive Board Member** | Boston University Unmanned Aerial Vehicles (UAV) Team

*2023-2024*

- Founded and led new club that empowers students to learn about, design, build, and fly UAVs
- Coordinate with industry engineers to host workshops, exposing club members to the UAV/embedded field.