

MAURICIO PEREIRA

Robotics at MIT

EDUCATION

Massachusetts Institute of Technology – December 2026

Bachelor of Science in Mechanical Engineering, Concentration in Control, Instrumentation, and Robotics

Relevant Coursework:

- Robotic Manipulation
- Introduction to Robotics
- Dynamics & Controls
- Design & Manufacturing
- Mechanics & Materials
- Fundamentals of Programming
- Numerical Computation for Mechanical Engineers
- Differential Equations

Miami Dade College – July 2023

Associate of Arts, Mechanical Engineering

SKILLS

- Electromechanical Design
- Robot Kinematics & Dynamics
- Drake
- Python
- MATLAB
- SolidWorks
- Machine Learning
- Meticulous attention to detail
- Analytical and Critical Thinking
- System Troubleshooting
- Spanish
- Outstanding communication skills
- Microsoft Office Suite

RELEVANT EXPERIENCE

Optimization of Computer Vision Dataset Creation

Undergraduate Researcher

Massachusetts Institute of Technology – Signal Kinetics Lab

June – August 2024

- Developed a dataset for computer vision models to enhance robotic Non-Line of Sight (NLOS) capabilities.
- Improved synchronization between a Universal Robot arm and mmWave radar through software.
- Automated radar measurements to enhance reliability of the data collection process, using MATLAB, Python, and Lua.

Automation of Maskless Lithography System

Research Intern

Florida International University – Pozdin Lab

May 2022 – January 2023

- Developed software to control microscope stage movements, replacing manual operation with MATLAB interface for precise structure fabrication, and reduced time from days to hours.
- Translated complex project requirements from interdisciplinary fields into actionable software specifications.
- Measured and calculated system parameters to optimize performance and integrate these parameters into the control software.
- Coordinated with engineers from Applied Scientific Instrumentation, integrating their expertise into the automation process.

Development of Head-Controlled Turret

Undergraduate Researcher

Miami Dade College – School of Science

May – July 2022

- Designed and built a turret controlled via head movements, with applications in search and rescue, research, and law enforcement.
- Implemented a smartphone application integrated with Raspberry Pi, Python, Node.js, and WebSocket to add another control method.
- Provided technical guidance on designing the head-tracking system and selecting internet communication protocols.