Joseph Ntaimo

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EDUCATION

Massachusetts Institute of Technology (MIT) **Cambridge, MA**

Candidate for Master of Science in Mechanical Engineering *December 2024*

- Vibrational stabilization of a dental drill

Bachelor of Science in Mechanical Engineering with Musical Robotics *May 2023*

- Relevant Coursework: Feedback Control Systems, Digital Control Systems, Robotics, Thermodynamics and Thermofluids, Microcomputer Electronics Laboratory

RELEVANT EXPERIENCE

Dynamics and Controls II — MIT Course 2.004 **Cambridge, MA**

Lab Assistant *August 2021 — Present*

- Set up technical labs assignments, help students debug controls systems, and grade assignments.
- Designed and built and upgraded segway robot with a custom PCB and wireless control

MIT Mechatronics Research Laboratory **Cambridge, MA**

Mechatronics Researcher *June 2023 — August 2023*

- Designed control systems to enable nano-scale 3D printing along a desired trajectory in MATLAB and LABView.

Formlabs **Somerville, MA**

Systems Integration Intern *May 2022 — August 2022*

- Developed, characterized, and integrated subsystems into the next generation of 3D printers.
- Designed and built test set ups to validate performance
- Debugged electro-mechanical systems and implemented fixes

MIT Media Lab – Opera of the Future Group **Cambridge, MA**

Music Technology Researcher *August 2021 — May 2022*

- Crafted sound responsive LED displays and instruments using novel materials and configurations

Hardware Engineer — MIT Hyperconnected *February 2021 — August 2021*

- Prototyped consumer-facing hardware and ideated for the next generation of virtual concert.

Software Engineer — TA Futures *September 2020 — January 2021*

- Developed software and processes for remote performance and interactive music systems in the context of a large-scale virtual collaborative musical experience.

Lincoln Laboratory — Advanced Undersea Systems and Technology **Lexington, MA**

Robotics Researcher and Teaching assistant *May 2021 — August 2021*

- Designed control systems using Robot Operating System to improve autonomous navigation for Autonomous Underwater Vehicles (AUVs)
- Taught students how to use image recognition in Python to control a commercial Autonomous Underwater Vehicle to navigate between custom LED Buoys.

Fundamentals of Python — MIT Course 6.009 **Remote (Cambridge, MA)**

Lab Assistant *August 2020 — December 2020*

- Inspected and troubleshot Python code for MIT students working on weekly programming assignments.

PROJECTS

LEDChess: A custom chessboard where the pieces are replaced by colors on an LED matrix.
FerroInstrument: A Hyperinstrument that uses electromagnets to move ferrofluid in response to sound
POVLED: A Persistence-of-vision LED globe
Sound Reactive Room Lighting: A Mel spectrum LED Display

SKILLS & INTERESTS

Languages: German (Intermediate), English
Computer/Programming: Python, C, C++ , MATLAB, Labview, Fusion 360, Solidworks, Onshape, Arduino, Git
Making: Musical Instrument Design**,** PCB Design**,** Welding, Laser cutting, Water jetting, Soldering, Breadboarding
Interests: DJing, Rubik's Cubing, Sound-reactive LEDs, Violin, Music production