Pyae Sone Nyo Hmine

518-421-7587 • pyaesone@mit.edu • linkedin.com/in/pyae-sone-hmine/ • github.com/pyae-sone-hmine

EDUCATION

Massachusetts Institute of Technology | Cambridge, MA Expected Graduation May 2026

B.S. - Electrical Engineering and Computer Science, Minor in Finance *Cumulative GPA: 4.60*

Coursework: Machine Learning, Deep Learning, Robotic: Sci & Systems, Dynamic Systems & Control, Algorithms, Linear Algebra, Probability & Random Variables, Data Science, Computer Architecture, Electrical Circuits, Computer Systems Eng

SKILLS & TECHNICAL TOOLS

Languages: Python, C, C++, Java, Assembly, Javascript, Typescript, Shell Scripting, Bash, MATLAB, HTML/CSS, Verilog

Technologies: PyTorch, Tensorflow, ROS, OpenCV, Scikit-learn, Keras, Docker, Embedded Systems, Nvidia Gym, Mujoco, Pandas, Numpy, Matplotlib, Git, Jupyter, Django, Flask, SQL, PCB Design

EXPERIENCE

Machine Learning & Software Engineer Intern | Magna - Advanced Robotics Troy, MI | *Jun 2024 - Present*

- Develop robotic manipulation techniques using deep reinforcement learning, integrating vision-based algorithms for real-time perception and control. Work on humanoid components to enhance dexterity and human-like adaptability in robotic systems.
- Worked directly under the supervision of the CEO as an Engineering Analyst, supporting strategic decision-making by conducting in-depth analyses of engineering projects and informed executive-level decisions.
- Developed new software and electronic prototypes; arranged a partnership with a leading auto-semiconductor company

Undergraduate Researcher | MIT CSAIL - Distributed Robotics Lab Cambridge, MA | *Aug 2023 - Present*

- Develop new approaches for robust self-driving vehicles using the MIT-developed car simulation engine VISTA
- Test models on a Lexus car modified with sensors, cameras, and a LiDAR system to understand sim-to-real behavior
- Implemented a learned Kalman Filter using RL, extending BarrierNet to improve neural network-based control
- Incorporated techniques from classical control theory, integrating vision algorithms developed by **Meta AI** such as DinoV2

Teaching Assistant | MIT Lincoln Laboratory Cambridge, MA | *Jun 2023 - Aug 2023*

- Instructed high schoolers on AI and Machine learning in the CogWorks course through project-based learning
- Managed Github organization for the course consisting of over **250+ students**, instructors, and faculty
- Led a project on a **patent-pending** AI song mixer using Spotify's dataset of over **100,000+ songs** and YouTube analytics

Undergraduate Researcher | MIT Marine Robotics Lab Cambridge, MA | *Oct 2022 – May 2023*

- Conducted research on Robotics and RL using PyTorch, bridging the gap between simulation and real-world behavior
- Trained over **80 million+ simulations** of various robots in environments such as **Nvidia Gym** and **Mujoco**
- Implemented Proximal Policy Optimization (PPO) algorithm developed by **OpenAI**, enhancing robot locomotion
- Gained expertise in cloud computing and parallel computing utilizing MIT's cloud supercomputer SuperCloud

Software Engineering Intern | Central Business Improvement District Albany, NY | *Jun 2022 – Aug 2022*

- Analyzed the city's data on business vacancies in Albany, inspected over **200,000+ vacancies** and crime rates, developed visualization map software using **Google API**, presented findings to the mayor's office for city development

PROJECTS

Autonomous UAV | *PyTorch, OpenCV, ROS, Python, MATLAB*

- Developed an Autonomous Drone leveraging machine learning and OpenCV to enable real-time human detection and self-navigation using a PID control system, ensuring the UAV could accurately follow and respond to user movements.

Sentiment Analysis Stock Prediction (Candidate for HackMIT) | *Python, Pandas, Flask, OpenAI,*

- Developed a predictive model to forecast stock price movements based on sentiment analysis of Twitter and Reddit data
- Implemented NLP techniques to preprocess and analyze social media text, assigning sentiment scores to identify trends

Home Security System |*Python, OpenCV, Discord API, PyTorch, Raspberry Pi*

- Designed a home security system with facial recognition and real-time remote monitoring capabilities
- Integrated Discord API for instant emergency notifications and live image capturing