Dami Thomas

678-499-7434 | dvthomas@mit.edu | www.linkedin.com/in/damithomas

EDUCATION

Massachusetts Institute of Technology (MIT) *Exp. May 2026*

Candidate for B.S in Artificial Intelligence and Decision Making

- **Relevant Coursework:** Robotic Manipulation, Introduction to Machine Learning, Introduction to Algorithms, Fundamentals of Programming, Introduction to Autonomous Machines, Numerical Computation for Engineers, Design and Manufacturing

EXPERIENCE

Wellman Center for Photomedicine | Researcher *January 2024 - July 2024 | Cambridge, MA*

- Deployed deep learning models to an embedded platform for point-of-injury medical diagnosis utilizing **Python**, the **Nvidia Jetson Nano** development kit, and a portable sensor for data collection and analysis.

Elinta Robotics | Assembly and Design Engineer *June 2023 - August 2023 | Kaunas, Lithuania*

- Spearheaded the design and implementation of automated systems using **aluminum profiles**, **stainless steel components**, and **FESTO pneumatic technology** for assembling a Milk Packaging Line.
- Engineered **pneumatic-powered actuators** with integrated **computer vision algorithms** to optimize efficiency and quality control in manufacturing processes for building a PCB Tester.

MIT Mechatronics Research Lab | Researcher *February 2023 - May 2023 | Cambridge, MA*

- Redesigned a mechatronics setup by creating **SolidWorks** CAD models and analyzing tolerances of each component in the system.

MIT AgeLab C3 Connected Home Logistics Consortium | Researcher *October 2022 - December 2022 | Cambridge, MA*

- Conducted research to envision the development of novel and evolving home services and catalyze smart home organizations seeking to develop them.
- Conceptualized possible smart home usage scenarios across consumers of different demographics and examined how existing technology services fit such scenarios.

PROJECTS

Autonomous Competition Robot *August 2023 - December 2023*

- Built and programmed an **Arudino**-powered robot capable of navigating various settings using **IMU**, **encoder**, and **line tracking sensor** readings.
- Utilized control algorithms such as **PID** and **Bang Bang Control** to maneuver through mazes and line-tracking maps.

Yu-Gi-Oh! Deck Builder *August 2024*

- Developed a Yu-Gi-Oh! deck builder website with **Node.js**, **Express.js**, and **EJS**, integrating the YuGiOhProDeck API to access and filter over **12,000 cards**.
- Implemented features for managing favorite cards and added OpenAI API for personalized deck advice and card news.
- Utilized **RESTful APIs** and **Axios** for efficient data handling and seamless user experience.

Pac-Man Bot *December 2024*

- Built a **Deep Convolutional Q-Network** using **PyTorch** and **OpenAI Gymnasium**, implementing epsilon-greedy exploration and experience replay to achieve autonomous Pac-Man gameplay with **average scores of 1000.**
- Designed a custom **CNN** architecture for efficient game frame processing and feature extraction, enhancing decision-making capabilities in the Pac-Man environment.

Lecture Notes Tutor *June 2024 - July 2024*

- Developed a **RAG** system using **LangChain**, **Chroma**, and **Ollama** embeddings, implementing cosine similarity search, text-to-vector conversion, and PDF document parsing with LangChain tools.
- Integrated a Command Line Interface with argparse for query input and vector database management, leveraging **LLMs** from **Ollama** for context-aware responses based on retrieved document chunks.

SKILLS

Software: SolidWorks | Autodesk Fusion 360 | Python | Linux | MATLAB | SQL | Javascript | Arduino | Adobe Illustrator | React.js | HTML | CSS | Bootstrap | Git | ROS2 | Numpy | Pandas | Node.js | Express.js | YOLO | Google CoLab

Maker: 3D Printing | Woodworking | CNC Lathe & Mill | Laser Cutting | Waterjet | Welding | Plasma Cutter | Drill Press