Yajvan Ravan

734-890-9822 — yajvanravan@gmail.com — https://yravan.github.io — LinkedIn

EDUCATION

Massachusetts Institute of Technology (MIT) Cambridge, MA
M.Eng. in Electrical Engineering & Computer Science; GPA: 5.0/5 *On Leave*
B.Sc. in Electrical Engineering & Computer Science; GPA: 5.0/5 *June 2025*

- **Selected Courses:** Computer Architecture. Design and Analysis of Algorithms. Intro to Machine Learning. Advances in Computer Vision. Intro to Inference. Representation, Reasoning, & Inference in AI. Sensorimotor Learning. Matrix Methods. Dynamic Computer Language Engineering. Dynamical System Controls. Robotic Manipulation.

University of Michigan, Oakland University, Schoolcraft College *June 2021*
Dual-enrolled High-School Student in Mathematics; GPA: 4.0/4

- **Selected Courses:** Real Analysis. Linear Algebra. Graph Theory. Number Theory. Differential Equations.

RESEARCH EXPERIENCE

Isola Lab, CSAIL, MIT Cambridge, MA
Research Intern, advised by Ge Yang, Adam Rashid, and Phillip Isola *Oct 2024 - Present*

- Developed **Lucid-XR**, a generative data engine for creating diverse synthetic training data for robotic systems. Built web-based XR physics simulation for human-to-robot pose retargeting and physics-guided video generation. Demonstrated zero-shot transfer of visual policies to real-world environments. *Project Page*

Learning and Intelligent Systems Group, CSAIL, MIT Cambridge, MA
Research Intern, advised by Zhutian Yang, Leslie Kaelbling, and Tomás Lozano-Pérez Aug 2023 - Sep 2024

- Developed **PoPi**, a hierarchical policy for long-horizon mobile manipulation of objects with unknown dynamics. The high-level motion planner proposes key poses that a local diffusion policy follows, enabling a Boston Dynamics Spot robot to rearrange office chairs in cluttered spaces (success rate 8/10 vs. 0 and 5/10 for baselines). *Project Page*

NASA Langley Research Center Langley, VA
Research Intern, advised by Chester Dolph *June 2023 - Dec 2023*

- Built dataset for multispectral, remote-sensing wildfire imagery by processing raw data from AMS sensor and trained a real-time deep-learning wildfire detection system.

Conformable Decoders, Media Lab, MIT Cambridge, MA
Research Intern, advised by Jason Hou and Canan Dagdeviren *Oct 2022 - May 2023*

- Worked on wearable eye-tracking sensors using micro piezoelectrics. Designed underwater electromechanical test system for neural sensors.

PUBLICATIONS

Ravan, Y.*, Rashid, A.*, Yu, A., McClennen, K., Huh, G., Yang, K., Yang, Z., Yu, Q., Wang, X., Isola, P.$^{+}$, & Yang, G.$^{*+}$. Lucid-XR: An Extended-Reality Data Engine for Robotic Manipulation. *Conference on Robot Learning (CoRL) 2025.* *Project Page*

Ravan, Y., Yang, Z., Chen, T., Lozano-Pérez, T., & Kaelbling, L.. Combining Planning and Diffusion for Mobility with Unknown Dynamics. arXiv Preprint arXiv:2410.06911. *Project Page*

Yu, A.*, Yang, G.*, Choi, R., **Ravan, Y.**, Leonard, J., & Isola, P.. LucidSim: Learning Visual Parkour from Generated Images. *Conference on Robot Learning (CoRL) 2024.* *Project Page*

Ravan, Y., Malek, A., Dolph, C., & Behari, N.. Real-Time Wildfire Localization on the NASA AMS using Deep Learning. *AIAA SciTech 2026.*

TEACHING EXPERIENCE

Teaching Assistant for 6.s058 (Introduction to Computer Vision), MIT *Spring 2025*
Lab Assistant for 6.390 (Introduction to Machine Learning), MIT *Spring 2023, Fall 2024*
Lab Assistant for 6.380 (Introduction to Inference), MIT *Fall 2023*

AWARDS

Winner of New Frontiers Track at HackMIT (2022): Nintendo Switch controller with CV. *Project Page*
USA Math Olympiad Qualifier (2021)
USA Junior Math Olympiad Qualifier (2020)
Gold Medal at the International Chemistry Olympiad (2019)

SKILLS

Programming Languages: Python, C++, C, Java, MATLAB, Bash, JavaScript, HTML, CSS, R.
Technical Skills: *ML:* PyTorch, TensorFlow, OpenCV; *Robotics:* MuJoCo, Drake; *CAD:* Onshape, Fusion; *Tools:* Git, Linux, Conda, AWS.
Non-technical Skills: Tennis, Weightlifting, Sailing.