Ashay Athalye

(508) 816 8078 ● ashay@mit.edu

Education

Massachusetts Institute of Technology, *Cambridge, MA* — 2016 – 2023
M.Eng. Candidate (September 2023), GPA: 5.0/5.0
S.B. in EECS and Economics (double major), minor in Mechanical Engineering (2021), GPA: 4.7/5.0
Coursework includes (**G** for graduate-level):

- *Math*: Differential Equations (18.03), Linear Algebra (18.06), Probability (6.041), Real Analysis (18.100B), Statistics (18.655) [**G**]
- *EECS*: Circuits & Electronics (6.002), Signal Processing (6.003, 6.011), Computer Systems Engineering (6.033), Feedback Control Systems (2.004, 16.30)
- *AI/ML/Inference*: Artificial Intelligence (6.034), Machine Learning (6.036, 6.867) [**G**], Reinforcement Learning (6.884) [**G**], Bayesian Modeling, Inference, and Information Theory (6.435, 6.437, 6.438) [**G**], Robotic Planning (16.420) [**G**], Econometrics (14.380-14.382) [**G**]

Publications

Tom Silver, **Ashay Athalye**, Joshua B. Tenenbaum, Tomás Lozano-Pérez, Leslie Pack Kaelbling. "Learning Neuro-Symbolic Skills for Bilevel Planning". In Proceedings of The 6th Conference on Robot Learning, PMLR 205:701-714. 2022. `https://arxiv.org/abs/2206.10680`

Research Experience

Learning & Intelligent Systems Lab, MIT, *EECS*, Graduate researcher — 2021-Present
Thesis: Learning Neuro-Symbolic Skills for Bilevel Planning
- Additional research on inventing state abstractions for planning and flexible abstractions for object grouping

Behavioral Economics Lab, MIT, *Economics*, Undergraduate researcher — 2020-2021
Mental Illness Discrimination
- Programmed web app to run RCT experiment; designed and ran surveys; conducted econometric and data analyses; contributed to experimental design and implementation of RCT

Manipulation & Mechanisms Lab, MIT, *EECS*, Undergraduate researcher — 2019 – 2020
Sensor Fusion of Visual and Tactile Sensory Data for Object Localization and Robotic Manipulation
- Designed and implemented filtering techniques for pose estimation of household objects

Work Experience

Waymo, Behavior Prediction Team, Software Engineering Intern — Summer 2021
- Designed and implemented deep learning models that improved the accuracy and latency of behavior predictions

Microsoft Research, Economics Group, Research Intern — January 2020
- Implemented Monte Carlo framework for evaluating new causal inference methods involving econometrics and ML

GM Cruise, Controls Simulation Team, Software Engineering Intern — Summer 2019
- Designed and implemented road model framework for path follower testing and vehicle dynamics simulation; tuned vehicle dynamics models; implemented FMI-based simulation framework

Raytheon BBN, Space and Airborne Systems, Research Intern — Summer 2018
- Designed and implemented swarm algorithms for cooperative multi-agent SLAM; designed mounting system for lidars and cameras onto rovers and drones; project manager for rover engineering objectives

NASA JPL, Computer Vision Group, Software Engineering Intern — January 2018
- Implemented pipeline to train deep learning models for task-oriented robotic grasping of novel objects

Teaching Experience

Course designer and lecturer for MIT 2.S972: Hacking Higher Ed (`hhe.mit.edu`)	Spring 2023
TA for MIT 6.437, Inference and Information	Spring 2023
TA for MIT 6.036, Introduction to Machine Learning	Spring 2021, Spring 2022, Fall 2022
TA for MIT 6.S087, Mathematical Methods for Multidimensional Statistics	January 2021, January 2022
TA for MIT 6.041/6.431, Probabilistic Systems Analysis	Fall 2020, Fall 2021

Leadership Experience

SOUL (`soul.mit.edu`), Founder and Director — 2023 - Present
- Worked on all aspects of the pipeline to publish high quality open education materials

MIT OpenCourseWare (OCW), Program Manager (part-time) — 2021-2022
- Created and managed a new program that hired students to develop open education course materials
- Programmed tools to speed up video editing and production pipeline