

Ashay Athalye

(508) 816 8078 • ashay@mit.edu

Education

Massachusetts Institute of Technology, Cambridge, MA

2016 – 2023

M.Eng. in EECS, 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

2021-2023

Thesis: Learning Neuro-Symbolic Skills for Bilevel Planning; advisors: Prof. Leslie Kaelbling, Prof. Tomás Lozano-Pérez

Behavioral Economics Lab, MIT, Economics, Undergraduate researcher

2020-2021

Economics of 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

Boston Dynamics AI Institute, Researcher

October 2023 - Present

- Led research on scalable predicate invention and predicate invention from pixels for task and motion planning; wrote software to integrate different research projects across the stack into a cohesive robotic system

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 new program to develop open education course materials; programmed video editing tools