

# Ashay Athalye

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## 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

Ashay Athalye\*, Nishanth Kumar\*, Tom Silver, Yichao Liang, Tomás Lozano-Pérez, Leslie Pack Kaelbling. "Predicate Invention from Pixels via Pretrained Vision-Language Models." In submission to Workshop on Planning in the Era of LLMs (LM4Plan) @ AAAI 2025. <https://www.ashay.io/pix2pred.pdf>

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://www.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 and RCT; conducted econometric analyses

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, Research Engineer

October 2023 - Present

- Led research on scalable predicate invention and predicate invention from pixels with VLMs 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](https://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 6.041/6.431, Probabilistic Systems Analysis

Fall 2020, Fall 2021

## Leadership Experience

SOUL ([soul.mit.edu](https://soul.mit.edu), nonprofit), 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