

Aayush Gupta

410 Memorial Drive: 432D, Cambridge, MA

EDUCATION



MIT
Class of 2022
6-3 CS Major



Saratoga High School
Class of 2018
High Honors

CONFERENCE PAPERS

A Decision-theoretic Approach to Detection-based Target Search with a Drone (2017)

Accepted at 2017 IEEE/RSJ International Conf. on Intelligent Robots and Systems (IROS)

- Built algorithm to determine drone actions in real time based on observations, using partially observable Markov decision processes
- We found the target 3.3 times faster when compared to a heuristic policy
- Led team with Daniel Bessonov and Patrick Li to efficiently divide tasks

Dynamic Pricing via Reinforcement Learning for Multi-Objective Optimization in the On-Demand Economy (2017)

Accepted to BayLearn 2017

- Presented a reinforcement learning framework to reduce passenger wait time while maximizing company profit.
- Formulated as a scalar optimization with multiple weighted objectives.
- Found policies to optimize different rideshare factors on a Pareto curve

WORK EXPERIENCE

Auto-LaTeX Equations Founder and Developer (2015-2018)

- Coded, branded, marketed Google Docs add-on
- Offer real time LaTeX mathematical expression rendering.
- Network with professors and admins to adopt for education

Over 75,000 weekly users.

4.0+ star rating.

Taught A-Star USACO Silver Camp (2017)

- Managed classroom to teach students at A-star USACO Silver
- Programmed grading system for adversarial bots on final

Volunteering: Math Club Head Teacher (2015-16)

- Led classroom, created curriculum, established calendar

CLUBS/CAMPS

Founder/President of Saratoga High IoT Club (2016-18)

- Attained \$5000 funding from Micron foundation by cold emails
- Created new club on campus focusing on Arduinos and sensors
- Created engaging projects like laser tag, game bots, theremins

Founder/President of Saratoga High AI Club

V. President of Saratoga High Math Club

SPARC Summer Camp (2017)

- Worked with CFAR and rationality community on creativity

COURSEWORK

MIT: 6.046 Advanced Algorithms, 6.036 Intro to Machine Learning, 6.004 Computation Structures

aayushg@mit.edu

408 621 8354

aayushg.com

[linkedin.com/in/aayushgupta0](https://www.linkedin.com/in/aayushgupta0)

AWARDS

Computer Science

USA Computing Olympiad

Natl. Camp 2016 (US Top 28)

Mastered algorithms like dynamic programming, recursion, shortest path, and binary trees (segment trees, etc) with C++.

Mathematics

USAJMO Qualifier 2016 (USA top 200 / 70000)

AIME Qualifier (2014-17)

Physics

USAPhO Silver Medal 2017 (USA top 150)

Linguistics

NACLO Top 50 in US 2016 (USA top 50)

PROJECTS

Synthesizing CT images from MRI images with Generative Adversarial Networks (GANs) 2017

Used GANs to create CT images from MRIs with state of the art accuracy.

1st Place 2018 Synopsys Science Fair

Combination Drug Toxicity Prediction using Protein-Drug Interactome Signatures 2016

Made algorithm to predict drug-drug interactions and treat thyroid cancer nontoxically.

Principal Component Analysis for Flow Cytometry Data 2015

Classified cells to find efficacy of Omalizumab for ragweed allergy

Cost-Effective Shadow Bot Follower Robot 2014

Built phone-controlled robot to follow user

Machine Learning for Dementia Detection in MRI images 2013

Detected dementia from MRIs using linear SVMs.

1st Place 2013 Synopsys Science Fair

(Bioinformatics), Broadcom Semifinalist