Aayush Gupta

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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)

- Used reinforcement learning with partially observable Markov decision processes to find the target 3.3 times faster than a heuristic policy
- Led team with Daniel Bessonov and Patrick Li to efficiently divide tasks

Dynamic Pricing via Reinforcement Learning for Multi-Objective Ridesharing Optimization (2017)

Accepted to BayLearn 2017

- Used reinforcement learning to produce a Pareto curve to reduce passenger wait time while maximizing company profit.

WORK EXPERIENCE

Securiti.ai Winter Intern (2019)

- Worked on confidential project in collaboration with other researchers

Auto-LaTeX Equations Founder (2015-2019)

Over 75,000 weekly users , 4.0+ star rating.

- Coded, branded, and marketed my own Google Docs add-on
- Offer LaTeX equations in gdocs using Javascript and HTML.
- Cold emailed professors and admins to adopt for education

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
- Used Arduinos to engage kids in 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

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 2017 (USA top 150)

Linguistics
NACLO 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

Neuralpets.io at Hacklodge 2019 2019
Gamified training of unlabeled data while teaching basics of AI-based classification

Combination Drug Toxicity Prediction using Protein-Drug Interactome Signatures 2016
Made algorithm to predict drug-drug interactions and treat thyroid cancer nontoxically.

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***