

Aayush Gupta

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EDUCATION



MIT

Class of 2022, 5.0 GPA
Computer Science



Saratoga High School

Class of 2018

RESEARCH

Self-attention for Graph Neural Networks (2019)

Won MIT Generator award for Best Project 2018

- Replaced standard message passing steps with query-key-value attention from NLP.
- Predicted computational chemistry properties on QM9 dataset.

A Decision-theoretic Approach to Detection-based Target Search with a Drone (2017) ([arXiv](#), first author)

Presented at 2017 IEEE/RSJ Int'l Conf on Intelligent Robots and Systems (IROS)

- Improved rescue time by 3.3x with reinforcement learning, modeled as a POMDP.
- Used Julia, SARSOP, and Python to build and test on a custom built drone. Led team of 3.

Dynamic Pricing via RL for Multi-Objective Rideshare Optimization (2017)

Presented at BayLearn 2017

- Showed 12% profit increase using reinforcement learning to produce a Pareto curve.

WORK EXPERIENCE

NVIDIA AI Intern: Perception Team (2020)

- Automated metrics pipeline in Tensorflow, speeding model evaluation by 10x.
- Analyzed model performance in Python to discover model bias.
- Tested performance of Tensorflow models with different superresolution heads.

Lipoker.io Founder (2020)

Created lipoker.io, the first videochat poker site with no signup or downloads. Led team of 4 to direct vision and deploy product.

- Created backend with Flask, SQLAlchemy, PostgreSQL and frontend in React.
- Led team to deploy on Google Compute Engine with Gunicorn and Nginx.
- Grew to 10,000+ monthly sessions and partnerships with gather.town

Copysmith AI CTO/Cofounder (2020)

- Recruited + led team of 6 engineers and designers.
- Created MVP for startup and grew to 100+ users.
- Deployed generative NLP model in Pytorch with AWS and Cortex, scalable up to 100K users.

MIT MIC ML-athon Co-Head Organizer (2020)

Scale AI Intern (2019)

- Modeled connected components of untrusted labelers to create a 95% confidence interval on bounding boxes. Used Node.js, MongoDB, SQL, Python.
- Reduced LIDAR labeling errors by 8%, with new incentives in React and Typescript.

Securiti.ai Winter Intern (2019)

- Coded custom dilated convolutional neural networks for image-based natural language processing applications with Google Colab and Pytorch.

Auto-LaTeX Equations Creator (2015-19)

Over **1,000,000** weekly users, 4.0+ star rating.

- Coded and branded a new Google Docs add-on for LaTeX equations.
- Marketed to professors and admins for education.

Hack Lodge Organizer and Developer (2019)

AWARDS

USA Computing Olympiad National Camp Finalist (2016)

Chosen as top 28 pre-collegiate competitive programmers to compete for a team USA spot. Mastered algorithms such as dynamic programming, binary trees, and graph theory with C++.

Putnam Top 500 Math Undergrads (2018)

USA Junior Math Olympiad Qualifier (2016)

Top 200 of > 70,000 students.

USA Physics Olympiad Silver Medal (2017)

Top 150 physics students in the USA.

Datathon Winner (2019)

Won 3rd place at Boston Datathon.

North American Computational Linguistics Olympiad Finalist (2016)

Top 50 in USA.

LANGUAGES

Python, JS, C, C++, Java

MIT CS COURSEWORK (5.0 GPA)

Current:

6.172 [Performance Engineering](#)

6.047 [Computational Bio](#)

Past:

6.864 [Graduate NLP](#)

6.857 [Graduate Security](#)

6.867 [Graduate Machine Learning](#)

6.438 [Algorithms for Inference](#)

6.890 [Deep Learning for Algorithms](#)

6.036 [Intro to Machine Learning](#)

9.66 [Computational Cogsci](#)

6.033 [System Design](#)

6.046 [Advanced Algorithms](#)

6.041 [Probability](#)

6.004 [Computation Structures](#)

6.03 [EECS for Medical Devices](#)