Ishank Agrawal

✉ agr.ishank@gmail.com
🌐 www.mit.edu/~ishank/
📞 +1 617-821-8218
👤 US Citizen

Education

Massachusetts Institute of Technology (MIT)	**2022 – 2025**

- Bachelor of Science in Computer Science and Engineering — Cambridge, MA
- GPA: 5.0
- Expected to MEng in 2026

CBSE Board (High School)	**2018 – 2022**

- Grade 12 - 97%, Grade 11 - 95%, Grade 10 - 93%, Grade 9 - 92% — India

Relevant Coursework

[G] indicates graduate course

Fall 2023
- [G] Efficient Deep Learning Computing
- [G] Deep Learning
- [G] Natural Language Processing
- [G] Stochastic Processes
- Software Performance Engineering
- Operating Systems Engineering

Previously Taken Courses
- [G] Inference and Information Theory
- Design and Analysis of Algorithms
- Computation Structures
- Fundamentals of Programming
- Introduction to Probability

Work Experience

Graviton Research Capital	**June 2023 – August 2023**

- Role: Intern - Quantitative Researcher
- Objective was alpha research on index options. Worked on National Stock Exchange (NSE), in particular the NIFTY BANK index.
- Researched several different areas including using deep neural nets for combining existing alphas, incorporating volatility into models, and innovating new methods to compare options across the chain.
- Gained a strong understanding of various option greeks and how they affect pricing. Proposed and implemented new alpha models that were incorporated into production.

Research Experience

Information Theoretic Learning in Communication Networks	**February 2023 – Present**

- Research under Dr. Xiangxiang Xu under the supervision of Prof. Lizhong Zheng
- Worked on solving deep fade problem, where signals from different users overlap and become hard to decode.
- Approached this problem using information theory. Trained deep neural networks to learn the pointwise mutual information of the input, output and channel parameters. Showed we can approximate highly non-linear MAP decision boundary well.
- Currently working on final research paper exhibiting results to submit to a telecommunication conference. See http://www.mit.edu/~ishank/blog.html for more.

Olympiad Experience

International Science Olympiads
- IPHO - USA Team Alternate 2021
- Indian IMO Training Camp 2019
  - Top 30 in INMO
- USA IPhO Training Camp 2021
  - Top 30 in USAPhO
- USAMO 2021 - Top 25

Medals and Achievements
- Asian Pacific Math Olympiad 2021 – Bronze
- Online Physics Olympiad 2021 – Gold
- IF Sharygin Geometry Olympiad Awardee
- Sir Issac Newton – 18th in the world
- JEE Advanced All India Rank 333
- William Lowell Putnam Competition 2022 – Top 500

Skills

- Programming: C++, Python, Javascript, LaTeX
- Machine Learning: PyTorch, Tensorflow, Keras
- Strong problem-solving skills, intuition; eager learner; close attention to detail
- Strong networking and communication skills; positive optimistic personality
- Fluent in English, Hindi; intermediate in Spanish
- Enjoy playing poker, chess, and basketball, as well as running and dance