

RUSHIL MALLARAPU

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Published Researcher | Winner at CT Science Fair | Harvard Student

An author on two scientific papers, winner of Computer Science award at CT Science and Engineering Fair, and researcher in computer science, chemistry, economics, and mathematics.

Education

Harvard University

Mathematics and Statistics, 4.0/4.0

- Math 55, Math 99R, Math 231BR, MIT 18.919
- Stat 110, Stat 123, Stat 171, Stat 210, Econ 1011A

Cambridge, MA

Sept. 2021 – May 2025

Fairfield Ludlowe High School

Valedictorian, AP Calculus BC, AP Computer Science, 4.8/5.0

Fairfield, CT

Aug. 2017 – Jun. 2021

Experience

Juvitop Speaker

Juvitop: Algebraic Topology Seminar (click title)

- Gave a talk on the proof of the May Nilpotence Theorem, following Mathew-Naumann-Noel.

Massachusetts Institute of Technology

Oct. 2022

Teaching Fellow

Stat 110: Introduction to Probability

- Assisted Prof. Joe Blitzstein with running Stat 110, the largest class at Harvard (800+ students).
- Prepared section notes, ran in-person and virtual office hours, and graded homework and exams.

Harvard University

Aug. 2022 – Dec. 2022

Seminar Coordinator

Chroma 2022: Harvard-MIT Homotopy Theory Seminar (click title)

- Organized a seminar on chromatic homotopy theory for Harvard, MIT, and UChicago students.
- Gave two talks on the statement and proof of Devinatz-Hopkins-Smith Nilpotence Theorem.

Harvard University

May 2022 – Aug. 2022

∞ -Operad Speaker

$(\infty, 1)$: Harvard Higher Categories Seminar (notes linked)

- Gave a talk on the formalism of ∞ -operads, following Lurie's Higher Algebra §2.1.

Harvard University

April 2022

Research Assistant

Department of Economics (click title)

- Worked with Prof. Ed Glaeser and Prof. Gabriel Kreindler to quantify urban road quality variations.
- Designed pipelines for scaled analysis of multi-terabyte datasets, and automated processing workflows.

Harvard University

Jan. 2022 – Aug. 2022

Vlcek Group Research Intern

Department of Chemistry and Biochemistry (click title)

- Studied higher-order quantum interactions in computation of electronic properties.
- Worked on large (20,000 loc) Fortran codebases and automated data processing pipelines.

UC Santa Barbara (Remote)

Jun. 2020 – Aug. 2021

Connecticut Science Fair Winner

First Place Winner of CS Award (paper linked)

- Developed a graph convolutional model for predicting syntheses of natural molecules.
- Created a website to host technology and won an award for forward-thinking research.

CT Science and Engineering Fair

Sep. 2019 – Feb. 2020

Projects, Certificates

Untyped λ Calculus Interpreter

Lambda Programming Language (Github linked)

- Developed lexer, parser, and reduction algorithm for the untyped λ calculus in modern Haskell.

Aug. 2020

IBM Data Science Certification

Coursera Specialization (certificate linked)

Feb. 2020 – Mar. 2020

Data Structures and Algorithms Certification

Coursera Specialization (certificate linked)

Jan. 2020 - Feb. 2020