Ish Shah

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Education

2022–2026 (expected) **Bachelor of Science**, *Rutgers University*, New Jersey, US, GPA: 4.0.
Major: Mathematics. Minor: Computer Science.

Interests

Harmonic analysis, analytic number theory, and complex analysis.

Research Experience

2024 **DIMACS REU**, *When Fourier analysis meets ergodic theory and number theory*, Mentors: Mariusz Mirek and Leonidas Daskalakis.

2023–2024 **Aresty Research Assistant Program**, *Mathematical Adventures in One-Dimensional Physics*, Mentor: Shadi Tahvildar-Zadeh.

Publications

1. *Pointwise ergodic theorems along fractional powers of primes* (with Erik Bahnson, Leonidas Daskalakis, and Abbas Dohadwala), preprint (submitted), arXiv:2412.07055.

Teaching Experience

At Rutgers University

Spring 2025 **Grader, Part-Time Lecturer/Teaching Assistant**, *CS 344 (Design and Analysis of Algorithms)*, Professor: Surya Teja Gavva.

Learning Assistant, *Math 152 (Calculus II).*

Fall 2024 **Grader, Part-Time Lecturer/Teaching Assistant**, *CS 344 (Design and Analysis of Algorithms)*, Professor: Mario Szegedy.

Learning Assistant, *Math 152 (Calculus II).*

Spring 2024 **Grader, Part-Time Lecturer/Teaching Assistant**, *CS 344 (Design and Analysis of Algorithms)*, Professor: Mario Szegedy.

Learning Assistant, *CS 112 (Data Structures).*

Fall 2023 **Learning Assistant**, *BAIT 370 (Management Information Systems).*

Awards

Jan. 2025, Feb. 2024 **Alan Marc Schreiber Memorial Scholarship**, *School of Arts and Sciences, Rutgers.*

Dec. 2024 **Goldwater Scholarship Nomination**, *Office of Distinguished Fellowships, Rutgers.*, (national award pending)

Sep. 2024 **Excellent TA/PTL/Grader Award**, *Department of Computer Science, Rutgers.*

Aug. 2024 **Maurice M. and Adrienne R. Weill Scholarship**, *Department of Mathematics, Rutgers.*

Relevant Coursework

At Rutgers University

Graduate level: real analysis 1 (measure theory, point set topology), real analysis 2 (introductory functional analysis), complex analysis, topics course on automorphic forms and L-functions.

Undergraduate level: honors calculus 3/4, probability theory, combinatorics, honors linear algebra, honors real analysis 1/2 (Rudin), honors abstract algebra 1/2 (Artin).

Directed reading: analytic number theory (Stein/Shakarchi *Complex Analysis*, ch. 6-7), partial differential equations (Evans *Partial Differential Equations*, ch. 2-4).

Talks

1. Rutgers Undergraduate Math Association Seminar (Rutgers University, New Jersey, US), November 2024.

Service

2024–2025 **Board Member (2024–2025)**, *Rutgers Undergraduate Math Association (RUMA).*

Computer Skills

- Proficient in LaTeX.
- Proficient in Python (including NumPy, SciPy, and Matplotlib).
- Familiar with Java, C/C++, JavaScript.