

Ish Shah

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🌐 ish-shah.github.io/

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Education

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

Interests

Harmonic analysis, analytic number theory, and elliptic and dispersive PDE.

Research Experience

- 2025 **Clemson REU in Number Theory**, *Topic: Shimura operators on half-integral weight modular forms*, Mentors: Hui Xue and Tianyu Ni.
- 2024 **DIMACS REU**, *Topic: When Fourier analysis meets ergodic theory and number theory*, Mentors: Mariusz Mirek and Leonidas Daskalakis.
- 2023–2024 **Aresty Research Assistant Program**, *Topic: Mathematical adventures in one-dimensional physics*, Mentor: Shadi Tahvildar-Zadeh.

Publications

2. *Shimura lifts of nearly holomorphic modular forms* (with Abby Linscott, Tianyu Ni, and Hui Xue). Submitted. (arXiv link will be included when available.)
1. *Pointwise ergodic theorems along fractional powers of primes* (with Erik Bahnson, Leonidas Daskalakis, and Abbas Dohadwala). To appear in **Int. Math. Res. Not. IMRN**. arXiv:2412.07055

Teaching Experience

At Rutgers University

- Fall 2025 **Learning Assistant**, *CS 111 (Introduction to Computer Science)*.
- 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, **Alan Marc Schreiber Memorial Scholarship**, *School of Arts and Sciences, Rutgers.*
Feb. 2024
Dec. 2024 **Goldwater Scholarship Nomination**, *Office of Distinguished Fellowships, Rutgers.*
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 1/2 (Folland), complex analysis (Stein/Shakarchi), functional analysis (Brezis), partial differential equations (Evans), topics course on automorphic forms and L -functions.
Undergrad 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).

Talks and Presentations

- Jul. 2025 12th Annual Summer Undergraduate Research Symposium, Clemson University (Clemson, South Carolina, US).
Nov. 2024 Rutgers Undergraduate Math Association Seminar, Rutgers University (Piscataway, New Jersey, US).
Jul. 2024 DIMACS REU Final Presentations, Rutgers University (Piscataway, New Jersey, US).
Apr. 2024 20th Annual Aresty Undergraduate Research Symposium, Rutgers University (New Brunswick, New Jersey, US).

Service

- 2025–2026 **President**, *Rutgers Undergraduate Math Association.*
2025–2026 **Lecturer**, *Rutgers Competitive Programming.*
2024–2025 **Public Relations Officer**, *Rutgers Undergraduate Math Association.*

Computer Skills

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