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 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, 2025.
1. *Pointwise ergodic theorems along fractional powers of primes* (with Erik Bahnson, Leonidas Daskalakis, and Abbas Dohadwala). **Int. Math. Res. Not. IMRN**, 2025(15). Preprint: arXiv 2412.07055.

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).

Awards

Sep. 2025 **Maurice M. and Adrienne R. Weill Scholarship**, *Department of Mathematics, Rutgers.*
Awarded to six full-time students majoring in mathematics based on academic merit.

Jan. 2025 **Alan Marc Schreiber Memorial Scholarship**, *School of Arts and Sciences, Rutgers.*
Awarded through the School of Arts and Sciences Excellence Award program based on academic merit, with preference to mathematics majors.

Jan. 2025 **Rutgers College Scholarship**, *School of Arts and Sciences, Rutgers.*
Awarded through the School of Arts and Sciences Excellence Award program based on academic merit.

Dec. 2024 **Goldwater Scholarship Nomination**, *Office of Distinguished Fellowships, Rutgers.*
Chosen from over a dozen applicants for the institutional nomination.

Sep. 2024 **Excellent TA/PTL/Grader Award**, *Department of Computer Science, Rutgers.*
Awarded to four undergraduate students and several graduate students based on reviews from faculty.

Aug. 2024 **Maurice M. and Adrienne R. Weill Scholarship**, *Department of Mathematics, Rutgers.*
Awarded to six full-time students majoring in mathematics based on academic merit.

Feb. 2024 **Alan Marc Schreiber Memorial Scholarship**, *School of Arts and Sciences, Rutgers.*
Awarded through the School of Arts and Sciences Excellence Award program based on academic merit, with preference to mathematics majors.

Teaching and Grading Experience

Fall 2025 **Grader**, *Math 411 (Mathematical Analysis I)*, Professor: Mariusz Mirek.

Learning Assistant, *CS 111 (Introduction to Computer Science).*

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

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

Spring 2024 **Grader and 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).*

Service

2025–2026 **President**, *Rutgers Undergraduate Math Association.*

2025–2026 **Lecturer**, *Rutgers Competitive Programming.*

2024–2025 **Public Relations Officer**, *Rutgers Undergraduate Math Association.*

Additional coursework

Audited courses	Functional analysis/semigroup theory, harmonic analysis.
Directed reading	analytic number theory (Stein/Shakarchi *Complex Analysis*, ch. 6-7).

Computer Skills

- Much experience with LaTeX.
- Much experience with Python (including NumPy, SciPy, and Matplotlib).
- Some experience with Maple and Wolfram Language.
- Some experience with Java, C/C++, and JavaScript.