Nilay Tripathi

Contact Information & Links:

Edison, NJ (NYC Metro Area)
(732) 910-4157
ntripathi2003@gmail.com
NilayT321
Nilay Tripathi
Personal Site

Areas of Interest:

Algebraic topology, low-dimensional topology (including knot theory), differential geometry.

Education:

Rutgers University–New Brunswick 09/2021 – Present
New Brunswick, NJ

- B.S. in Mathematics (GPA: 4.000)
- B.A. in Statistics (GPA: 3.961)
- Minor in Computer Science
- CGPA: 3.956

Expository Projects:

Directed Reading Program (DRP), Rutgers
Work with a graduate student on research throughout the semester to present to a student coloquium.

- Summer 2024: "Differential Geometry & Relativity" (work in progress)
- Fall 2023: "An Overview of Hermite Polynomials"; selected for Student Presentation award.

Class Presentations, Rutgers
Presentations given as part of a class at Rutgers

- "de Rham Cohomology"; given as a part of Math 412, Mathematical Analysis II , Spring 2024
- "Banach & Hilbert Spaces: An Introduction to Functional Analysis"; given as a part of Math 441, Introductory Topology I, Fall 2023

Independent Reading/Studies, Rutgers In Summer 2024, I did an independent reading project on vector bundles and K-theory.

Experience:

Learning Assistant, Rutgers University–New Brunswick 09/2022 – Present
New Brunswick, NJ

- Implement best pedagogical practices, as supported by scientific literature for various classes.
- 2024-2025 Academic Year: CS 111 (Introduction to Computer Science) and CS 112 (Data Structures); independently led recitation sections.
- 2023-2024 Academic Year: Math 300 (Introduction to Mathematical Reasoning); problem-solving workshops during lecture.
- 2022-2023 Academic Year: Stat 212 (Statistics II); independently led study groups.

Relevant Coursework:

At Rutgers University:

- Math 540, Algebraic Topology I (Fall 2024)
- Math 503, Complex Variables I (Fall 2024)
- Math 451, Abstract Algebra I (Fall 2024)
- Math 442, Introductory Topology II (Spring 2024)

- Math 412, Mathematical Analysis II (Spring 2024)
- Math 441, Introductory Topology I (Fall 2023)
- Math 411, Mathematical Analysis I (Fall 2023)
- Math 350, Linear Algebra, Honors (Spring 2023)
- Math 300, Introduction to Mathematical Reasoning (Fall 2022)

Honors & Awards:

- Dean's List 2021-2022 academic year
- Dean's List 2022-2023 academic year
- Dean's List 2023-2024 academic year

Skills:

Programming Languages:

- Python
- Java
- C/C++
- R
- Matlab
- LaTeX

Software Expertise:

- Python modules & frameworks: NumPy, pandas, scikit-learn, matplotlib, PyTorch
- Git/GitHub
- Linux (Ubuntu, Fedora/RHEL)
- Jupyter Notebook/Jupyter Lab
- MS Office
- Statistical Software (SAS, JMP)

Languages:

- English (native)
- Hindi (native)