Nilay Tripathi

☎ (732) 910-4157   👤 Personal Site
✉ ntripathi2003@gmail.com   ⭘ NilayT321

AREAS OF INTEREST:

Algebraic topology, low-dimensional topology, 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)
- B.A. in Computer Science
- CGPA: 3.956

TALKS & PRESENTATIONS:

Undergraduate Talks:
- November 2024: "Homology & Its Applications"; Rutgers Undergraduate Mathematics Association (RUMA) Seminars
- September 2024: "Smooth Manifolds & Symplectic Geometry"; Rutgers Directed Reading Program
- May 2024: "de Rham Cohomology"; given as a part of Rutgers course Math 412
- December 2023: "Banach & Hilbert Spaces: An Introduction to Functional Analysis"; given as a part of Rutgers course Math 441
- December 2023: "An Overview of Hermite Polynomials"; Rutgers Directed Reading Program

TEACHING EXPERIENCE:

Math Department Grader, Rutgers University–New Brunswick   09/2024–Present
- Graded student homework for various math classes and provide feedback to instructors.
- Fall 2024: Math 311 (Introductory Real Analysis) & Math 441 (Introductory Topology I)

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); 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
- Student Presentation Award for my DRP presentation on Hermite Polynomials, given in Fall 2023.

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)