Mandon Pathak

Curriculum Vitae (Prepared Oct. 2026)

pathak30@purdue.edu
mandonpathak@gmail.com

Research Interests

- Harmonic Analysis
  - Time-Frequency Analysis
- Geometric Measure theory
- Convex integration

Harmonic analysis, geometric measure theory and its interplay with partial differential equations.

Employment

Aug 2023– **Purdue University**, *West Lafayette, IN, USA.*
Doctoral Student, Teaching assistant/ Research assistant.

Education

Aug 2023- **Purdue University**, *West Lafayette, IN, USA.*
Ph.D. Student in Mathematics. Expected graduation Spring 2028.
Advisor: Prof. Victor D. Lie

2018–2023 **Indian Institute of Science Education and Research (IISER)**, *Bhopal, MP, Bharat.*
Dual BS-MS degree in Mathematics
Advisor: Dr. Sombuddha Bhattacharya (IISERB) and Dr. Venky Krishnan(TIFR-CAM)
Dissertation: **Partial differential equations and applications to imaging**

Ongoing Work

- **On the curved Bilinear Hilbert–Carleson Operator.**

Publication

- **Bilinear Operators Along Variable Curves (with N. Gismondi)**
  arXiv:2610.40472
- **Non-unique solutions to the periodic gKdV equation (with N. Gismondi, K. Ma and A. Radu)**.
  arXiv:2606.06916

- **Nontrivial Weak Solutions of the Stationary KdV equation in Sharp L^p Spaces.** arXiv:2603.12555; 2026 Nonlinearity 39 105019.

Honors and Awards

2023 Recipient of the Mathematics Proficiency Gold Medal for best academic performance in the graduating batch (2023) at IISER Bhopal.

2017 Inspire fellowship, sponsored by the Department of Science and Technology (DST), Government of India, for being in the top 1% of India's ISC board. (not availed)

Teaching

Purdue University

Fall 2026	MA 261 - TA for Multivariable Calculus
Summer 2026	MA 511 - Research Assistant spent time doing Harmonic Analysis.
Spring 2026	MA 511 - Grader for Linear Algebra and Its Application
Fall 2025	MA 261 - TA for Multivariable Calculus
Spring 2025	MA 261 - TA for Multivariable Calculus
Fall 2024	MA 261 - TA for Multivariable Calculus
Summer 2024	Research Assistant in Stochastic Analysis with Dr. Samy Tindel.
Spring 2024	MA 366 - Grader for Ordinary Differential Equations
Fall 2023	MA 161 - TA for Plane Analytic Geometry and Calculus I

Conferences and Workshop

May 2026 **Simons School on Discrete harmonic analysis and analytic number theory**
Alfréd Rényi Institute of Mathematics, Budapest Hungary.

References

Dr. Victor Lie, Purdue University, vlie@purdue.edu.

Dr. Plamen Stefanov, Purdue University, stefanov@math.purdue.edu.

Dr. Sombuddha Bhattacharyya, IISER Bhopal, sombuddha@iiserb.ac.in.

Dr. Venky Krishnan, TIFR-CAM, vkrishnan@tifrbng.res.in.