Deependra Singh

deeps@sas.upenn.edu | deependra230.github.io

EDUCATION

University of Pennsylvania Philadelphia, PA
Ph.D., Mathematics 2019 – 2024 (Expected)

Title: *Admissible Groups over Global Fields*
Advisor: Prof. David Harbater

University of Pennsylvania Philadelphia, PA
M.S.E., Computer & Information Science (GPA 4.0/4.0) 2017 – 2019

Indian Institute of Technology Delhi New Delhi, India
B.Tech., Computer Science & Engineering 2010 – 2014

PUBLICATIONS

"Admissible groups over global fields". 2024 manuscript, available at [deependra230.github.io/pdf/-admissibility.pdf](deependra230.github.io/pdf/admissibility.pdf)

"Enhanced integrated gradients: improving interpretability of deep learning models using splicing codes as a case study", with A. Jha, J. Aicher, and Y. Barash. *Genome Biology*, Vol. 21 (2020), pp. 1–22.

"Automating Relevance Banding in e-Commerce Search using Click Model", with V. Deolalikar. *IEEE International Conference on Big Data*, 2018, pp. 3793-3797.

"Islands of Interest: Mining Concentrations of User Search Intent over e-Commerce Product Categories", with N. Pradhan and V. Deolalikar. *IEEE International Conference on Big Data*, 2018, pp. 3717-3722.

AWARDS AND FELLOWSHIPS

Benjamin Franklin Fellowship
University of Pennsylvania 2019–2024

Certificate in College and University Teaching
Penn Center for Teaching and Learning Fall 2023

Good Teaching Award
University of Pennsylvania Mathematics Department Spring 2021

Fellowship in Computer Science
University of Pennsylvania 2017–2019

MHRD scholarship
Government of India 2010–2014

TEACHING

University of Pennsylvania Philadelphia, PA
- *Instructor of Record*, Math-1410 Calculus II Summer 2023

Penn Pre-First Year Program Philadelphia, PA
Program for first generation, low-income undergraduate students.
- *Instructor of Record*, Math-C Pre-Calculus Summer 2024 (scheduled)

- *Teaching Assistant*, Math-A Pre-Calculus   Summer 2023

Princeton Prison Teaching Initiative   Spring 2023 – Present
Volunteer math instructor for South Woods State Prison in New Jersey.
- *Tutor*, MATH 020 Algebra   Spring 2024
- *Co-Instructor*, Math in the Courtroom   Spring 2023

University of Pennsylvania   Philadelphia, PA
- *Teaching Assistant*, Math 3610 Advanced Calculus II   Spring 2024
- *Teaching Assistant*, Math 3610 Advanced Calculus II   Spring 2024
- *Teaching Assistant*, Math 360 Advanced Calculus I   Fall 2021
- *Teaching Assistant*, Math 509 Honors Analysis II   Spring 2021
- *Teaching Assistant*, Math 240 Calculus III   Fall 2020

Penn Directed Reading Program   Fall 2021 – Present
Mentor for the following undergraduate reading projects:
- *Number Theory*, Molly Bradley   Spring 2024
- *Quadratic Reciprocity*, Angela Cai   Fall 2023
- *Algebraic Curves*, Max Wang   Spring 2023
- *Probablistic Methods*, Max Wang   Fall 2022
- *Covering Spaces*, Kevin You   Fall 2021

Service and Facilitation

Penn Graduate Algebraic Geometry Seminar   Fall 2022 - Present
Co-organizer of the student algebraic geometry seminar with A. Kwon and E. Lennen.

Patching in Arithmetic Geometry   Spring 2022
Co-organizer of the graduate student seminar on patching methods in arithmetic geometry.

Math Circles   Summer 2023 - Present
Co-organizer of the Math Circles at the West Philadelphia High School with M. Ong.

Talks

Graduate Student Conference in Algebra, Geometry, and Topology
- *Admissible groups over number fields*   Summer 2024 (scheduled)

Penn Algebra Seminar
- *Admissibility over number fields*   Spring 2024

Penn Graduate Algebraic Geometry Seminar
- *Rational points on varieties and the Brauer-Manin set*   Spring 2024
- *An introduction to Étale cohomology*   Spring 2023
- *Admissibility over $\mathbb{Q}$*   Fall 2022

Patching in Arithmetic Geometry
- *Patching division algebras over semi-global fields*   Spring 2022

Expository Talks
- *Grothendieck topologies and cohomology*   Spring 2024

- *Milnor K-theory*   Spring 2022
- *Numerical invariants and stability on algebraic stacks*   Fall 2021
- *Introduction to spectral sequences*   Spring 2021

SELECTED CONFERENCES & SEMINARS

- The Mordell conjecture 100 years later   Summer 2024 (scheduled)
- Graduate Student Conference in Algebra, Geometry, and Topology   Summer 2024 (scheduled)
- VaNTAGe Seminar   Fall 2023 - Present
- Arizona Winter School 2024: Abelian Varieties   Spring 2024
- Algebraic Geometry Northeastern Section (AGNeS)   Fall 2023
- Arizona Winter School 2022: Automorphic Forms Beyond GL2   Spring 2022

WORK EXPERIENCE

Groupon   Palo Alto, CA
Data Scientist, *Search & Data Mining team*   Oct 2015 – June 2017

Groupon   Chennai, India
Data Scientist, *Data Science team*   Jun 2014 – Sep 2015