Deependra Singh

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WORK EXPERIENCE	**Emory University** Visiting Assistant Professor, *Department of Mathematics*	Atlanta, GA Aug 2024 - Present

EDUCATION

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

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

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

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

Emory University	Atlanta, GA

- *Instructor of Record*, Math-221 Linear Algebra — Fall 2024

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
- *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

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
- RNT: Rethinking Number Theory   Summer 2024
- Graduate Student Conference in Algebra, Geometry, and Topology   Summer 2024
- 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

PREVIOUS 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