Urshita Pal

University of Michigan
Department of Mathematics
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urshitapal.github.io

Education

University of Michigan, USA
Ph.D., Mathematics, 2021-Present.
Advisor: Jenny Wilson

University of Michigan, USA
M.S., Mathematics, 2021-23.

Chennai Mathematical Institute, India
B.Sc., Mathematics & Computer Science, 2018-21.

Research Interests

(Co)homology of Arithmetic Groups, (Co)homological stability phenomena

Awards and Fellowships

Rackham One-Term Dissertation Fellowship
January 2025 - April 2025

Gold Medal of Excellence, BSc Math & Computer Science
Chennai Mathematical Institute, 2021
Highest GPA at time of graduation

Tuition Fee Waiver
Chennai Mathematical Institute, Aug 2018 - April 2021

Bronze Medal, European Girls Math Olympiad
Held in Florence, Italy, 2018

International Math Olympiad Training Camp, Mumbai, India
Selected for Participation, 2017 & 2018

Research Papers

Representation Stability in the (Co)homology of Vertical Configuration Spaces
with D Baron, C Wang, J Wilson, and C Yang
ArXiv preprint ArXiv:2412.01128

Teaching

University of Michigan
Instructor, Math 105 (Data, Graphs & Functions), Fall 2024
Instructor, Math 115 (Calculus 1), Fall 2023
Instructor, Math 115 (Calculus 1), Winter 2023
Instructor, Math 115 (Calculus 1), Fall 2022
Instructor, Math 115 (Calculus 1), Winter 2022
Instructor, Math 115 (Calculus 1), Fall 2021

Chennai Mathematical Institute
Teaching Assistant, NPTEL Rings & Fields, Jan-March 2021
Teaching Assistant, Topology, Spring 2021
Teaching Assistant, Complex Analysis, Spring 2021
Teaching Assistant, Analysis 3, Fall 2020
Teaching Assistant, Probability Theory, Spring 2020

Talks

Invited Talks
-*Steinberg Modules and* $H^*(SL_n\mathbb{Z};\mathbb{Q})$
Scissors Congruences, Algebraic K-Theory and Steinberg Modules, July 2024
(Held at the American Institute of Mathematics, Pasedena)

-*Conectivity and Cohomology* (5 min lightning talk)
Young Geometric Group Theory, Bristol, April 2024

Student & Learning Seminars
-*The Nerve Lemma and Spectral Sequences*, Winter 2024
-*Configurations, Graphs and Trees*, Winter 2024
-*Rational Duality Groups and* $H^*(SL_n\mathbb{Z};\mathbb{Q})$, Fall 2023
-*Introduction to Group (Co)homology*, Fall 2023
-*Configurations, Graphs and Trees*, Fall 2023
-*High Dimensional Cohomology of* $SL_n\mathbb{Z}$, Winter 2023
-*Grassmannian Cohomology and Symmetric Polynomials*, Winter 2023
-*A Gentle Introduction to Representation Stability*, Fall 2022
-*The Combinatorial Nullstellensatz and its Applications*, Winter 2022
-*Braid Groups*, Fall 2021

Service and Mentorship

University of Michigan REU, Summer 2024
-*Graduate Student Mentor for the REU hosted by Jenny Wilson*

Student Dynamics/Geometry/Topology Seminar
-*Co-organiser 2022-23, Organiser 2023-24*

Lab of Geometry at Michigan
-*Served on the Admissions Committee in Fall '23 & Winter '24*

AWM Mentoring Programs
-*Mentor in the Mentor-Mentee program for the Academic Year 2022-23*
-*Participated in the 'Vertical Mentoring Program' in Winter 2024*

Michigan Directed Reading Program
-*Mentor, Winter 2023*

Michigan Math Club
-*Fagnano's Problem and Reflecting Triangles*, Jan 2023

Michigan Math Circle
-*Tiling With Dominoes*, Feb 2022

Conferences and Workshops Attended

- Scissors Congruences, Algebraic K-Theory and Steinberg Modules, July 2024
(Organised through the American Institute of Mathematics, Pasedena)

- Young Geometric Group Theory XII, Bristol, April 2024

- Stability in Topology, Arithmetic and Representation Theory, Purdue, 2023
(Attended Virtually)

- Nearly Carbon Neutral Geometric Topology Conference, June 2023
(Attended Topic Group: Profinite and Residual Methods in Geometric Group Theory)

- Nearly Carbon Neutral Geometric Topology Conference, September 2022
(Attended Topic Group: Group Actions on Hyperbolic Spaces)

- Michigan Research Experience for Graduates, June 2022
(Project Topic: *Braids and Polynomials*)

Languages and Skills

Hindi, English, Bengali (native); German (basic)
LaTeX, C++, Haskell, Python, Java