

Sayantankhan

University of Michigan
Department of Mathematics
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Education

University of Michigan

Ph.D., Mathematics, Expected 2024

Indian Institute of Science

B.Sc. (Research), Mathematics, 2018

Honors Thesis : *The Laplacian on Riemannian manifolds*

Research

Research interests

Teichmüller theory, mapping class groups, hyperbolic geometry

Papers

- *The limit set of non-orientable mapping class groups.* (To appear in Journal of Modern Dynamics; arXiv:2110.0003)
- *Pseudo-Anosov homeomorphisms of punctured non-orientable surfaces with small stretch factor.* With Caleb Partin and Rebecca R. Winarski. (To appear in Algebraic and Geometric Topology; arXiv:2107.04068)

Teaching

University of Michigan

- Instructor for Math 116 (Calculus II) (Fall 2021, Winter 2020, Fall 2019)
- Teaching assistant for Math 215 (Multivariable Calculus) (Fall 2020)
- Instructor for Math 115 (Calculus) (Winter 2019)
- Instructor for Math 105 (Precalculus) (Fall 2018)

Awards

- Rackham Predoctoral Fellowship, 2022-2023
- UMich Math Department Graduate Fellowship, Summer 2019-2020
- DAAD-WISE Fellowship at University of Münster, 2017
- KVPY Fellowship, 2014-2018

Talks

Invited talks

- *The limit set of non-orientable mapping class groups* (Topology Students Workshop (Summer 2022), Rice University Topology Seminar (Fall 2021), CUNY Geometry and Topology Seminar (Fall 2021))
- *A tour through the proof of Margulis Superrigidity* (University of Michigan Topology Seminar (Fall 2019))
- *The strange dynamics of non-orientable surfaces* (BUGCAT 2020 (Fall 2020))

- Mentorship
- *MathDRP@UM* (Fall 2022)
Mentored an undergraduate student in a directed reading of William Fulton's 'Algebraic Curves'.
 - *Lab of Geometry at Michigan* (Winter 2021)
Mentored a group of undergraduate students who implemented the Lelièvre-Weiss convexity test in Sage for squared-tiled surfaces in $H(2)$.
 - *University of Michigan REU* (Summer 2020)
Graduate student mentor for the REU hosted by Alex Wright in the summer of 2020.
 - *QR study group leader* (Summer 2021)
Led the real analysis study group to help incoming grad students prepare for the qualifying review.
- Service
- Mentor for LOG(M), Winter 2021
 - Co-organizer for Student Dynamics, Geometry, and Topology Seminar, 2020-2021
- Conferences
- Salt Flats Teichmüller dynamics research cluster, January 2023
 - Topology Students Workshop, July 2022
 - Park City Math Institute Summer Graduate School, July 2021
 - CMI-HIMR Dynamics and Geometry Online Summer School, Clay Mathematics Institute, Heilbronn Institute for Mathematical Research, June 2021
 - Midwest Dynamical Systems, Fall 2021 and Fall 2019
 - Nearly Carbon Neutral Geometry and Topology Conference, 2022 and 2021
 - MSRI Summer School on 'Random and arithmetic structures in topology', June 2019
 - Houston Summer School on Dynamical Systems, June 2019
 - AIS on algebraic geometry, IISER Pune, July 2018
 - BMS Student Conference, Freie Universität Berlin, February 2018
 - Geometry, Groups, and Dynamics, ICTS Bangalore, November 2017
 - ITCSC-INC Winter School, Chinese University of Hong Kong, January 2017
- Technical skills
- Haskell
 - Python (including Sage)
 - Rust
 - Lean theorem prover
 - C (including CUDA)