Shashini Marasinghe Mudiyanselage

Contact Information

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Education

Michigan State University, East Lansing MI

Ph.D. Candidate, Mathematics (expected Summer 2027)

- Thesis topic: Hyperbolic manifolds, Seifert fibered 3-manifolds and Turaev-Viro invariants volume conjecture.
- Advisor: Professor Efstratia Kalfagianni.

University of Peradeniya, Sri Lanka

B.Sc. Honours degree in Mathematics, First-Class Honours, 2021.

Research Interests

Quantum and Low-dimensional Topology, Knot Theory, Quantum Computing, Mathematics Education.

Publications

- Marasinghe, S., "Seifert fibered 3-manifolds and Turaev–Viro invariants volume conjecture," awaiting publication.
- Detcherry, R., Kalfagianni, E., Marasinghe, S., "Seifert cobordisms and the Chen–Yang volume conjecture," awaiting publication.

Conferences & Seminar Talks

- TBD Pitt AWM Student Seminar, University of Pittsburgh (March 2026).
- Seifert fibered 3-manifolds and Turaev–Viro invariants volume conjecture, University of Iowa (June 2025).
- Seifert fibered 3-manifolds and Turaev–Viro invariants volume conjecture, Temple University (May 2025).
- Witten–Reshetikhin–Turaev invariant of Seifert fibered 3-manifolds, MSU Graduate Geometry and Topology Seminar (Spring 2025).

- Introduction to the Volume Conjecture, MSU Graduate Geometry and Topology Seminar (Spring 2025).
- 6-j symbols, MSU Graduate Geometry and Topology Seminar (2024).

Teaching Experience

Michigan State University

Instructor of Record

MTH 103A – College Algebra A (In-person) Spring 2026

Designed and delivered the course to 40 students; implemented weekly group activities; developed original worksheets, teaching material, quizzes, and exams.

MTH 299 – Introduction to Proofs (Online) Summer 2025

Designed and delivered the entire course with three synchronous meetings per week; developed worksheets and online quizzes; facilitated collaborative group work using digital tools; provided real-time feedback.

MTH 234 – Multivariable Calculus 3 (In-person) Fall 2023, Spring 2024

Designed and delivered the course to 32 students; developed original worksheets and assessments; held regular office hours.

MTH 101 – Quantitative Literacy 1 (Online) Summer 2023

Worked with three sections (100+ students); held extended office hours; provided individualized feedback.

MTH 124 – Survey of Calculus 1 (In-person) Summer 2022

Taught a 20-student class; designed worksheets, learning materials, and quizzes.

Teaching Team

MTH 299 – Transition to Proofs (In-person) Fall 2025

Led two recitation sections (60 students); facilitated problem-solving sessions; graded written work.

MTH 101 – Quantitative Literacy 1 (Online) Fall 2022

Facilitated discussions and student support across three sections; teaching and grading.

MTH 124 – Survey of Calculus 1(In-person) Spring 2022

Conducted office hours and grading.

MTH 133 – Calculus 2 (In-person) Fall 2021

Supported instruction through problem-solving office hours and feedback on student work.

Curriculum Development

MTH 103A – College Algebra A (In-person) Spring 2026

Designed worksheets to support cooperative learning; developed quizzes and exams.

MTH 299 – Transition to Proofs (Online) Summer 2025

Created proof-writing supports; introduced a LaTeX component as a supplementary project.

MTH 101 – Quantitative Literacy 1 (Online) Spring 2023, Spring 2025

Redesigned WebWork homework problems; developed new projects.

MTH 234 – Multivariable Calculus 3 (In-person) Fall 2023, Spring 2024

Developed original worksheets and assessment materials to encourage cooperative learning.

MTH 124 – Survey of Calculus 1 (In-person) Summer 2022

Created practice materials and guided examples.

Teaching Mentoring

- Instructional Mentoring Lead TA for undergraduate learning assistants: observed 20+ ULAs over a semester and provided structured verbal and written feedback on teaching practices (2022–2024).
- Instructional Mentoring Lead TA for graduate second-year teaching assistants: conducted two classroom observations per GTA and held in-person mentoring meetings with written feedback focused on instructional improvement (2024).
- Resource person for discussion-based instruction for undergraduate learning assistants and first-year teaching assistants (2025).

Research Mentoring

- RTG MSU Summer Topology Program (Summer 2023): Mentored two students on low-dimensional topology, mathematical writing, Latex and research presentations.
- Resource person for LaTeX workshop in Sri Lanka (2024).

Professional Development

- FAST Fellowship (Future Academic Scholars in Teaching): competitive, high-engagement teaching

professional development program for STEM Ph.D. students at Michigan State University, one of 10 selected university-wide (2025–2026).

- CIRTL MOOC: An Introduction to Evidence-Based STEM Undergraduate Teaching, Center for the Integration of Research, Teaching and Learning (CIRTL); focused on evidence-based pedagogy, inclusive teaching practices, and teaching-as-research methods (2025–2026).

Honors & Awards

FAST Fellowship (Future Academic Scholars in Teaching), $5,000	2025–2026
TA Award for Excellence in Teaching, Michigan State University, $500	2023–2024
Best Poster Presentation Award, ICCME	2021
Award for Academic Excellence, University of Peradeniya	2021
Dean's List, University of Peradeniya	2018–2019 (two semesters)
Runner-up, EUDOXUS Quiz Competition	2018

Service & Leadership

Organizer, MSU Graduate Geometry and Topology Seminar	2024–2025
Treasurer, American Mathematical Society Graduate Student Chapter, MSU	2022–2023
Secretary, Association for Women in Mathematics, MSU Chapter	2021–2022
Lead TA, MSU	2022–2024
Editor, magazine "Mathéma," University of Peradeniya	2019–2020
Vice President, SIAM Student Chapter, University of Peradeniya	2020–2021

Skills

LaTeX, Python, Lean, Adobe Illustrator, GitHub, D2L, Gradescope, WebWork.