GOKUL BHUSAL

Contact Information

Email	bhusalgo@msu.edu
Address	Department of Mathematics, Michigan State University
	619 Red Cedar Road
	C533 Wells Hall
	East Lansing, MI 48824

Education

Present	Ph.D. Applied Mathematics, Michigan State University, East Lansing
	Advisor: Ekaterina Rapinchuk
May 2020	B.S. Mathematics & Minor in Computer Science, Magna cum laude,
	The University of Southern Mississippi.
	Advisor: Zhifu Xie

Professional Experience

Fall 2021 - On-going	**Research Assistant**, Michigan State University.
	– Currently working on project on semi-supervised graph-based method
	– Implementing graph-MBO scheme with persistent laplacians to develop classification method.
Spring 2017 – Spring 2020	**Undergraduate Research Assistant**, University of Southern Mississippi.
	– Studied Newton N-Body problem. Worked a project on planer 6-body problem and Twisted central configuration of the Eight-body problem.

Research Interests

Graph-based methods, Machine learning, Graph Neural Networks.

Publications

Undergraduate

- Zhifu Xie, **Gokul Bhusal**, Hamas Tahir, Central Configurations in the Planar 6-body Problem Forming Two Equilateral Triangles, *Journal of Geometry and Physics*.

Graduate

- **Gokul Bhusal**, Ekaterina Rapinchuk, Guowei Wei, Persistent Laplacian-enhanced Graph-MBO Algorithm for Classification With Scarcely Labeled Data. (In Preparation)

Conferences

- USA/USM/SELU Math and Physics Research Mini Conference, April 2019

- Joint Mathematics Meeting San Diego, CA, January 2018

- Undergraduate Symposium on Research and Creative Activity, Hattiesburg, MS, March 2018

Teaching Experience

Michigan State University

- Teaching assistant

Spring 2023	Matrix Algebra with Computational Applications (TA)
Fall 2022	Calculus II (Recitation Instructor)
Summer 2022	Calculus I (Instructor of record)
Spring 2022	Calculus II (Recitation Instructor)
Fall 2021	Calculus II (Recitation Instructor)
Summer 2021	Calculus II (Recitation Instructor)
When teaching	Math learning center tutor

Scholarships and Awards

2020	Early start fellowship, Michigan State University ($6,000)
2018	Placed 2nd in Louisiana/Mississippi region's Mathematical Association of American Competition for research paper competition.
2018	Received travel grant to present poster presentation in JMM 2018 ($500)
2018	Nominated for the College of Science and Technology's Outstanding Sophomore Award

Service and professional organizations

- **Treasurer**, Nepali student Association, Summer 2021–Fall 2022

- **Member**, AMS, Fall 2020 – Present.

- **Member**, SIAM, Fall 2016 – Present.

- **Treasurer** Kappa Mu Epsilon, Fall 2018– Spring 2020

Selected Graduate Coursework

- Measure theory
- Complex analysis
- Numerical linear algebra
- Numerical ODE
- Introduction to PDE (two semesters)
- Mathematics of Data Science
- Topological Data Analysis
- Machine Learning
- Graph Theory
- Deep Learning
- High Dimensional Probability
- Computational Optimization (Spring 2023)

Relevant Skills

Proficiency	MATLAB, C++, Python, LaTeX.
Familiarity	Maple, HPCC Environments.