Shashank Sule

CONTACT
INFORMATION

1304 William E. Kirwan Hall
4176 Campus Drive
University of Maryland
College Park, MD 20740-4015

ssule25@umd.edu

EDUCATION

University of Maryland, College Park   2020−2025

     Ph.D. candidate in Applied Mathematics, Statistics, and
Scientific Computation

Amherst College   2016−2020

     A.B. Mathematics, *summa cum laude*
Thesis: Two Multiresolution Frameworks on Graphs

Massachusetts Institute of Technology   Spring 2019

     Special Student in the Mathematics Department

Budapest Semesters in Mathematics   Fall 2018

RESEARCH
INTERESTS

Applied harmonic analysis, nonlinear dimensionality reduction, machine learning theory and applications to rare events and inverse problems.

PUBLICATIONS

Sobolev Orthogonal Polynomials on the Sierpinski Gasket (Journal of Fourier Analysis and Applications, 2021). Qingxuan Jiang, Tian Lan, Kasso Okoudjou, **Shashank Sule**, Robert Strichartz, and Sreeram Venkat, and Xiaoduo Wang.

IN
PREPARATION

Error analysis of target measure diffusion maps and applications to transition path theory. **Shashank Sule**, Luke Evans, Maria Cameron (In preparation, available upon request).

Emergence of the SVD as an interpretable factorization in deep learning for inverse problems. **Shashank Sule**, Richard G. Spencer, Wojciech Czaja (In preparation, available upon request).

AWARDS &
FELLOWSHIPS

Jacob K. Goldhaber Travel Grant:	Sept. 2022
Michael Brin Graduate Fellowship	Aug. 2020−Jun. 2024
Dean's Fellowship, University of Maryland	Aug. 2020−Jun. 2022
The Robert H.Breusch Prize for the best undergraduate	May 2020

thesis in Mathematics and Statistics

The Walker Award in Mathematics and Statistics	May 2020
Amherst Memorial Fellowship	Aug. 2020−Jun. 2021
Loeb Center Summer Experience Fellowship	Jun. 2019
Sarles Fellowship, Amherst College	Jun. 2018
Gregory S. Call Academic Internship	Aug. 2017−May 2018
Davis United World College Scholarship	Aug. 2016−May 2020
First Place and Outstanding Award (SCUDEM 2018)	Apr. 2018

TALKS

Joint Mathematics Meetings 2020 Jan. 2020
AMS Contributed Session on Functional Analysis,
Operator Theory, and Operator Algebras I
University of Maryland
Norbert Wiener Center RIT Sept. 2021
Deep Learning RIT Dec. 2021
Machine Learning for rare events RIT Dec. 2021
Student PDE seminar Apr. 2022
Southeastern Undergraduate Mathematics Workshop Aug. 2019
Georgia Institute of Technology

POSTERS

University of Maryland Oct. 2022
Fall Fourier Talks
Descrambling the descrambler: Do all roads lead to the SVD?
Universita di Genova Sept. 2022
Applied Harmonic Analysis and Machine Learning Summer School
Error analysis of Target Measure Diffusion Maps on $\mathbb{R}^d$
Ohio State University Aug. 2019
Young Mathematicians Conference
Sobolev Orthogonal Polynomials on the Sierpinski Gasket
Amherst College Aug. 2018
Annual Summer Research Symposium
Normality of Toric Rings and Rees Algebras of Strongly Stable Ideals

ACTIVITIES

Co-Chair Spring 2018
Amherst College International Students' Association
Treasurer Spring 2017
Amherst College South Asian Students' Association
Staff Writer Fall 2017
The Indicator
Support Facilitator Jun. 2015, 2016, 2017

UWC Mahindra College

<table>
<tr><td>TEACHING
EXPERIENCE</td><td colspan="2">**Teaching Assistant, Amherst College**</td></tr>
<tr><td></td><td>• MATH 250−Number Theory</td><td>Spring 2020</td></tr>
<tr><td></td><td>• MATH 320−Wavelets and Fourier Analysis</td><td>Fall 2019</td></tr>
<tr><td></td><td>• MATH 220−Mathematical Reasoning and Proof</td><td>Fall 2019</td></tr>
<tr><td></td><td>• ECON 330−Macroeconomics</td><td>Spring 2018</td></tr>
<tr><td></td><td>• CHEM 160−Chemical thermodynamics</td><td>Fall 2017</td></tr>
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SKILLS AND
LANGUAGES

MATLAB, Julia, Mathematica, Python, R

Github: `https://github.com/ShashankSule`

English (native), Marathi (native), Hindi (native), Spanish (reading and writing proficiency), Hungarian (reading proficiency)