

Mukundan, Malavika

<https://MalavikaMukundan.github.io>

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|-------------------------------------|---|--|
| EMPLOYMENT | <i>President's Postdoctoral Fellow</i> Department of Mathematics University of California, Los Angeles, CA | Jul 2024 - Present |
| EDUCATION | University of Michigan , Ann Arbor, MI <i>PhD in Mathematics</i> Advisor: Sarah C. Koch <i>MS in Mathematics</i> | Sep 2018 - May 2024 Sep 2018 - Aug 2020 |
| | Chennai Mathematical Institute , Chennai, India <i>BSc. (Hons.) in Mathematics and Computer Science</i> | Jul 2015 - Apr 2018 |
| RESEARCH INTERESTS | Holomorphic dynamics Teichmüller theory Computational social choice | |
| GRANTS & AWARDS | <i>AMS Graduate Student Travel Grant</i> University of Michigan , Ann Arbor, MI <i>Rackham Conference Travel Grant</i> <i>Usha Sharma Bhalla Fellowship Fund</i> <i>Carroll V. Newsom Scholarship</i> <i>Rackham Graduate Student Research Grant</i> <i>Departmental Fellowship</i> <i>Lauter Program Associate Fellowship</i> , MSRI, Berkeley, CA <i>Stipend</i> , Chennai Mathematical Institute, Chennai, India <i>Summer Research Fellowship</i> , JNCASR, Bengaluru, India | Feb 2024 Jun 2023, Dec 2023 Summer 2022, Fall 2023 May 2023 2023 Summer 2020, 2021, 2022 Jan - May 2022 2015 - 2018 May - Jun 2017 |
| PUBLICATIONS & PREPRINTS | <ul style="list-style-type: none">Marked cycle curves for quadratic polynomials and rational maps (joint with C. Davis, D. Stoll and G. Tiozzo) In preparation.Dynamical approximation of post-singularly finite exponentials Preprint (2023). arXiv:2305.18245Dynamical approximations of post-singularly finite entire functions (joint with N. Prochorov and B. Reinke) Submitted (2023). arXiv:2305.17793Embedding unicritical connectedness loci Accepted (2022). arXiv:2209.02601A solution to the degree-d twisted rabbit problem (joint with R. Winarski) Submitted (2022). arXiv:2209.06099 | |
| TEACHING EXPERIENCE | University of Michigan , Ann Arbor, MI <i>Math 116</i> (Calculus II) <i>Math 105</i> (Data, Functions and Graphs) <i>Math 215</i> (Calculus III) Teaching Assistant <i>Math 115</i> (Calculus I) Chennai Mathematical Institute , Chennai, India <i>Analysis II</i> Teaching Assistant <i>Analysis I</i> Teaching Assistant | Fall 2021, Winter 2020, 2021, 2023, 2024 Fall 2020 Fall 2019 Fall 2018, Winter 2019 Spring 2018 Fall 2017 |

INVITED TALKS

Conference Talks & Presentations

Midwest Dynamical Systems Early Career Conference, The Ohio State University, May 2024

Joint Mathematics Meetings: Special Session on the Mathematics of Decisions, Elections and Games, San Francisco, Jan 2024

AMS Fall Southeastern Sectional Meeting: Special Session on Ergodic Theory and Dynamical Systems, University of South Alabama, Oct 2023

Early Career Complex Dynamics Workshop, Indiana University Bloomington, Jun 2023

CMS Summer Meeting: Session on Geometric Topology, pseudo-Anosov Maps and Complex Dynamics, Jul 2023

Midwest Dynamics Early Career Conference (poster presentation), University of Notre Dame, May 2022

Colloquium & Seminar Talks

University of Illinois Chicago Dynamics Seminar Jan 2024

Boston University Dynamics Seminar Jan 2024

Quasiworld Seminar (online) Dec 2023

Cornell University Dynamics Seminar Nov 2023

University of Michigan CADG Seminar Nov 2023, Oct, Apr 2021, Nov 2020

The Open University Dynamical Systems Seminar (online) Apr 2023

University of Liverpool Dynamical Systems Seminar Mar 2023

University of Warwick Geometry and Topology Seminar Mar 2023

Institute of Mathematical Sciences Chennai, Colloquium Dec 2022

University of Toronto Dynamics Seminar Nov 2022

University of Chicago Topology and Geometry Seminar Oct 2022

TIFR Infosys Chandrasekharan Random Geometry Colloquium (online) Oct 2022

MSRI Complex Dynamics Junior Seminar Apr 2022

IUPUI Dynamical Systems Seminar Nov 2021

Student Talks

University of Michigan Student DGT Seminar Winter 2020

University of Michigan Student Topology Seminar Fall 2019

University of Michigan Student Analysis Seminar Winter 2018

CONFERENCES & WORKSHOPS

Thematic Program on Randomness and Geometry, Fields Institute, Toronto, Canada, April 2024

Big Ideas in Dynamics (online participation), Fall 2023

Randomization, Neutrality, and Fairness Workshop, Simons Laufer Mathematics Institute, Berkeley, California, Oct 2023

Quasiworld Workshop, University of Helsinki, Helsinki, Finland, Aug 2023

Around the Mandelbrot set: A conference celebrating the 60th birthday of Mitsuhiro Shishikura (online participation), Tokyo, May 2023

Midwest Dynamical Systems Early Career Conference, University of Notre Dame, May 2022

Complex Dynamics School: Building a Bridge to Higher Dimensions, IUPUI, Mar 2022

Complex Dynamics: from Special Families to Natural Generalizations in One and Several Variables, MSRI, Berkeley, CA, Jan - May 2022

Midwest Dynamical Systems Conference, Northwestern University, Nov 2021

Advancing Bridges in Complex Dynamics (online participation), CIRM, Luminy, France, Sep 2021

Midwest Dynamical Systems Conference, University of Illinois Chicago, Nov 2019

Summer School on Dynamical Systems, University of Houston, Jun 2019

School on Low-Dimensional Geometry and Topology: Discrete and Algorithmic Aspects, Institut Henri Poincaré, Paris, France, Jun 2018

SERVICE

Volunteer Artist, AWM EvenQuads Deck 2 2023

Participating Mentor, AWM Mentor Network 2021, 2023

Lecturer, Monsoon Math Camp 2021

University of Michigan, Ann Arbor, MI
Co-Chair, Graduate Student Advisory Committee Sep 2022 - Present
Grad Member, Math Department Climate Committee Sep 2022 - Aug 2023
Co-Organizer, Jobs in Academia for Mathematics (JAMS) Sessions Apr 2023
Leader, Michigan Math Circle Apr 2022, Feb 2021, Feb 2020, Nov 2019
Board Member, AWM Student Chapter Sep 2020 - Aug 2022
Steward, Graduate Employees' Organization (GEO) 3550 Sep 2021 - Aug 2022
Co-Organizer, MREG Workshop Jun 2022
Teacher's Assistant, MREG Workshop Jun 2021
Volunteer, F.E.M.M.E.S Capstone Jun 2020
Volunteer, Math Corps summer camp July 2020

Chennai Mathematical Institute, Chennai, India
Guest Lecturer, EGMO Training Camp Dec 2022

INTERNSHIPS **MGGG Redistricting Lab** Jun - Aug 2023
Tufts University, Medford, MA
 o The mathematics of ranked choice voting
 o Software development: VoteKit package for alternative voting
<https://pypi.org/project/votekit/>

Research Lab in Computer Science (ReLaX) Initiative May - Jun 2018
LIGM, L'Université Paris-Est Marne-la-Vallée, Paris, France
 o Parameterized algorithms in computational geometry
 o Discrete systolic geometry

Undergraduate Summer Research Internship Jun - Jul 2017
Jawaharlal Nehru Center for Advanced Scientific Research, Bengaluru, India
 o Techniques in probability and functional analysis

COMPUTER SKILLS
 Python
 Julia
 Git
 C++
 Haskell

LANGUAGES
 English (fluent)
 Tamil (native)