

Amalrose Vayalinkal

Email: amalrose.vayalinkal@mail.utoronto.ca

Website: amalvayalin.github.io

Education	PhD in Mathematics , University of Toronto, Toronto, ON Since Fall 2022 Honours Bachelor of Science , University of Toronto, Toronto, ON Mathematics Specialist and Psychology Major Convocated in June 2022
Interests	Algebraic Geometry, Algebraic Topology, Representation Theory, Dynamics
Awards	Canadian Graduate Research Scholarship NSERC PGS-D (\$120,000/ 3 years) 2025 Ontario Graduate Scholarship (\$30, 000/ 2 years) 2023 City of Toronto Women in Math Scholarship (\$7000) 2023 Martin Shubik Graduate Award In Mathematics (\$8000) 2023 Women in STEM Scholarship (\$9,000) 2023 NSERC USRA with Prof. Almut Burchard (\$8,000) Summer 2021
Ongoing Research	Mapping Class Group Action on Character Varieties 2023-Present Advisor: Prof. Daniel Litt Splitting Types for S_n covers of \mathbb{P}^1 2023-Present with Andy Ramirez-Cote, Charlie Wu, Simon Xu Advisor: Prof. Daniel Litt
Preprints	Vayalinkal, Amal. “Enumerating Finite Braid Group Orbits on $SL_2(\mathbb{C})$ -Character Varieties.” arXiv:2407.21180 (accepted by Épijournal de Géométrie Algébrique) 2024
Technical	Magma code for computing middle convolution of matrices in $SL_2(\mathbb{C})$ and computing braid group orbit when known to be finite, available on website
Previous Research	Virtual Ring Routing Project University of Toronto 2021-2022 Area of Study: Graph Theory and Probability Advisor: Prof. Almut Burchard Developed models for Virtual Ring Routing (VRR) and explored the efficiency of the algorithm. Studied the scaling limits of aggregate stretch and other efficiency factors in the network with worst-case constructions. SPCL Lab Research Assistant University of Toronto Feb 2021- Sep 2021 Area of Study: Social Cognitive Psychology Advisor: Prof. Nicholas Rule Working in the SPeCiaL Lab, updating data analysis pipeline in R and preparing experimental stimuli. Contributed to a project exploring gender classification of faces via mouse-tracking analysis.
Invited Talks	Junior Algebraic Geometry Seminar University of Toronto September 2025 Orbits of Flag Varieties Bird’s Eye Conference University of Toronto March 2025 Character Varieties of Surface Groups Math Union Colloquium University of Toronto Fall 2021 Virtual Ring Routing Undergraduate Seminar University of Toronto - Mississauga Summer 2021 Virtual Ring Routing

Teaching	Course Instructor University of Toronto	
	MAT224 Linear Algebra	Winter 2025 Winter 2026
	Teaching Assistant University of Toronto	
	MAT224 Linear Algebra	Fall 2024
	MAT224 Linear Algebra	Summer 2024
	MAT257 Analysis II	Fall 2023 Spring 2024
	MAT354 Complex Analysis	Fall 2023
	MAT235 Multivariable Calculus	Summer 2023
	MAT257 Analysis II	Fall 2022 Spring 2023
	MAT354 Complex Analysis	Fall 2022
	MAT136 Calculus 1(B)	Spring 2022
	MAT135 Calculus 1(A)	Fall 2021
	Math Learning Centre	Fall 2021
	MAT133 Calculus for Commerce	Fall 2020 Spring 2021
Mentorship	High-School Mentorship Program University of Toronto	Spring 2023-2024
	Girls in STEM Workshop University of Toronto	Jan 2023
Leadership	Association for Women in Math University of Toronto	2020-2021
	Secretary	
	Facilitated communication between members, executive team and faculty administration. Provided a space for math students to socialize and find support. Succeeded in passing a motion for a wider variety of courses, including gender studies, to meet the Mathematics ethics requirement	
	Math Union University of Toronto	2018-2019
	Academic Officer	