



Chirantan Mukherjee

CONTACT INFORMATION

ORCCA Lab
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EDUCATION

The University of Western Ontario, Canada

M.Sc. in Computer Science, Sep. 2023–Anticipated Dec. 2024.

- Member of the ORCCA (Ontario Research Centre for Computer Algebra) Lab.
- Supervisor: Dr. Marc Moreno Maza.

Ph.D. coursework in Mathematics, Sep. 2022–Aug. 2023.

University of Trento, Italy

M.Sc. in Advanced Mathematics, Sep. 2019–Mar. 2022.

- Dissertation: Complete Segal Spaces as a model of Higher Categories.
- Advisor: Dr. Nima Rasekh.

Erasmus+ Study in University of Warsaw, Poland.

Institute of Mathematics and Applications, India

B.Sc. (Honors) in Mathematics and Computing, Aug. 2015–Apr. 2018.

- Dissertation: Set Theory and Foundation of Mathematics.
- Advisor: Dr. Shashi Mohan Srivastava.

PUBLICATIONS

Submitted

Mar. 2022 Chirantan Mukherjee, Nima Rasekh. *Twisted Arrow Construction for Segal Spaces*. arXiv preprint, 2022. arXiv:2203.01788.

TALKS

- Jul. 2023 *The Quickhull Algorithm for Higher Dimensional Convex Hulls*, Mathematical Computation, The University of Western Ontario, Canada.
- May 2023 *Twisted Arrow Construction for Segal Spaces*, Ottawa Mathematics and Statistics Conference, University of Ottawa, Canada.
- Mar. 2023 *Model Structure on Simplicial Categories*, Graduate Student Seminar, The University of Western Ontario, Canada.
- Jul. 2022 *Complete Segal Spaces as a Model of Higher Categories*, GROOT Summer Seminar 2022, University of Notre Dame, US.
- Jun. 2022 *Higher Category Theory*, Indian Statistical Institute, Kolkata, India.
- Mar. 2021 *The $Conf_2$ space of rational homology of S^3 and propagators*, University of Warsaw, Poland.
- Jan. 2021 *Differentiable manifolds and forms, de Rham cohomology*, University of Warsaw, Poland.
- Dec. 2020 *Products and cochains of equivariant cohomology theories*, University of Warsaw, Poland.
- Nov. 2020 *Polish spaces*, University of Warsaw, Poland.

AWARDS AND GRANTS

- 2022–2023 *Western Graduate Funding*, The University of Western Ontario, Canada, \$28,100.
- 2021–2022 *Thesis Research Abroad*, University of Trento, Italy, €2,700.
- 2020–2021 *Erasmus+ Grant*, Italian Erasmus+ Agency, Italy, €6,207.
- 2015–2018 *National Board for Higher Mathematics Scholarship*, Government of India, India, ₹2,500/month.

TEACHING	Courses	The University of Western Ontario, Canada
	Fall 2023	<i>CS 2214, Discrete Structures for Computing</i> , Teaching Assistant. In charge of teaching a class of 226 students and holding weekly office hours.
	Summer 2023	<i>Math 1600, Linear Algebra I</i> , Teaching Assistant. Managing two classes of 45 students each solving weekly problems and grading assignments.
	Winter 2023	<i>Math 1600, Linear Algebra I</i> , Teaching Assistant. Managing a class of 41 students helping them solve weekly problems, conducting bi-weekly quizzes and grading them.
	Fall 2022	<i>Math 1228, Methods of Finite Mathematics</i> , Teaching Assistant. Proctoring and marking tests throughout the term.
	Projects	The University of Western Ontario, Canada
	Fall 2022	Sterling Ebel. <i>The Yoneda Lemma</i> . Directed Reading Program.
	Other	The University of Western Ontario, Canada
	2022–2023	<i>Math-Physics Accelerator Help Centre</i> Duties both in-person and virtual help centre.
		Institute of Mathematics and Applications, India
Jun. 2017	<i>Regional Mathematical Olympiad Training Camp</i> Train junior mathematical olympiad 2016 awardees for mathematical olympiad.	
Jun. 2017	<i>Training Camp for Pathani Samanta Mathematics Scholarship</i> Nurturing of talents in mathematics from rural India.	
May 2016	<i>Training Camp for Pathani Samanta Mathematics Scholarship</i> Nurturing of talents in mathematics from rural India.	
2015–2018	<i>Sunday Morning Problem Solving Classes</i> Interactive classes for school children, with emphasis on children from vernacular schools.	
INTERNSHIPS AND RESEARCH SCHOOLS	2022	<i>HoTTEST Summer School 2022</i> , The University of Western Ontario, Canada. Introduction to homotopy type theory and formalization.
	2022	<i>Higher Category Lecture</i> , Australian National University, Australia.
	2021	<i>Masterclass on Topological Field Theories and Factorization Homology</i> , University of Copenhagen, Denmark, €336.07 (University of Copenhagen) + €469.69 (University of Trento).
	2021	<i>EPFL Topology Seminar Spring 2021</i> , EPFL, Switzerland. Seminar on algebraic topology and category theory.
	2021	<i>Intensive Research Programme: Higher Homotopical Structures</i> , CRM, Spain. Development of higher categorical tools for theory and computations in algebraic K-theory and related theories.
	2020	<i>Scuola Matematica Interuniversitaria</i> , University of Perugia, Italy.
	2017	<i>Summer Research Programme</i> , Institute of Mathematical Sciences, India, ₹11,000.
	2017	<i>Project on basic set topology</i> , Indian Statistical Institute, Kolkata, India.
TECHNICAL SKILLS	Languages:	C/C++, Coq (<i>learning</i>), GAP, Java, Python, SageMath.
	Software:	Google Suites, L ^A T _E X, Maple, Mathematica, Microsoft Office.