



Chirantan Mukherjee

CONTACT INFORMATION

ORCCA Lab
Department of Computer Science
The University of Western Ontario

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EDUCATION

The University of Western Ontario, Canada

Ph.D. in Computer Science, May 2024–present.

- Member of the ORCCA (Ontario Research Centre for Computer Algebra) Lab.
- Advisor: Dr. Marc Moreno Maza.
- Fast track to Ph.D. from M.Sc. in Computer Science, Sep.2023–Apr. 2024.

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.

WORK EXPERIENCE

The Society of Graduate Students, Canada

Ombudsperson, Sep. 2023–present.

PUBLICATIONS

Submitted

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

TALKS

Apr. 2024 *The Delinearization of C programs*, UWORCS 2024, The University of Western Ontario, Canada.

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.

TECHNICAL SKILLS	<p>Languages: C, C++, Cilk, CUDA, GAP, Java, Julia, Python, SageMath.</p> <p>Software: Google Suites, L^AT_EX, Maple, Mathematica, Microsoft Office.</p>
AWARDS AND GRANTS	<p>2024 <i>Second Place for Best Business Plan</i>, Graduate Students Innovation Scholars 2024, Canada.</p> <p>2023–2024 <i>Western Graduate Funding</i>, The University of Western Ontario, Canada, \$31,950.46.</p> <p>2022–2023 <i>Western Graduate Funding</i>, The University of Western Ontario, Canada, \$28,100.</p> <p>2021–2022 <i>Thesis Research Abroad</i>, University of Trento, Italy, €2,700.</p> <p>2020–2021 <i>Erasmus+ Grant</i>, Italian Erasmus+ Agency, Italy, €6,207.</p> <p>2015–2018 <i>National Board for Higher Mathematics Scholarship</i>, Government of India, India, ₹2,500/month.</p>
TEACHING	<p>Courses The University of Western Ontario, Canada</p> <p>Winter 2024 <i>CS 2214, Discrete Structures for Computing</i>, Teaching Assistant. Teaching, preparing assignments and exercises, and holding weekly office hours.</p> <p>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.</p> <p>Summer 2023 <i>Math 1600, Linear Algebra I</i>, Teaching Assistant. Managing two classes of 45 students each solving weekly problems and grading assignments.</p> <p>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.</p> <p>Fall 2022 <i>Math 1228, Methods of Finite Mathematics</i>, Teaching Assistant. Proctoring and marking tests throughout the term.</p> <p>Projects The University of Western Ontario, Canada</p> <p>Fall 2022 Sterling Ebel. <i>The Yoneda Lemma</i>. Directed Reading Program.</p> <p>Other The University of Western Ontario, Canada</p> <p>2022–2023 <i>Math-Physics Accelerator Help Centre</i> Duties both in-person and virtual help centre.</p> <p>Institute of Mathematics and Applications, India</p> <p>Jun. 2017 <i>Regional Mathematical Olympiad Training Camp</i> Train junior mathematical olympiad 2016 awardees for mathematical olympiad.</p> <p>Jun. 2017 <i>Training Camp for Pathani Samanta Mathematics Scholarship</i> Nurturing of talents in mathematics from rural India.</p> <p>May 2016 <i>Training Camp for Pathani Samanta Mathematics Scholarship</i> Nurturing of talents in mathematics from rural India.</p> <p>2015–2018 <i>Sunday Morning Problem Solving Classes</i> Interactive classes for school children, with emphasis on children from vernacular schools.</p>

INTERNSHIPS
AND RESEARCH
SCHOOLS

- 2024 *The Graduate Student Innovation Scholars 2024*, The University of Western Ontario, Canada, \$500.
Teach graduate students how to generate value from a research technology,
- 2022 *HoTTEST Summer School 2022*, The University of Western Ontario, Canada.
Introduction to homotopy type theory and formalization.
- 2022 *Higher Category Lecture*, Australian National University, Australia.
- 2021 *Masterclass on Topological Field Theories and Factorization Homology*, University of Copenhagen, Denmark, €336.07 (University of Copenhagen) + €469.69 (University of Trento).
- 2021 *EPFL Topology Seminar Spring 2021*, EPFL, Switzerland.
Seminar on algebraic topology and category theory.
- 2021 *Intensive Research Programme: Higher Homotopical Structures*, CRM, Spain.
Development of higher categorical tools for theory and computations in algebraic K-theory and related theories.
- 2020 *Scuola Matematica Interuniversitaria*, University of Perugia, Italy.
- 2017 *Summer Research Programme*, Institute of Mathematical Sciences, India, ₹11,000.
- 2017 *Project on basic set topology*, Indian Statistical Institute, Kolkata, India.