Tora Ozawa

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Education

August 2021 - May 2025 **University of Rochester,** BA in Mathematics and BS in Computer Science,
*Some adjectives, nouns and so on are removed from course names for the sake of brevity. Others are added to convey more information. See transcript for details such as course numbers and official names. Links to syllabi/course websites provided if available.

Relevant Undergraduate Coursework

Fall 2021

- Data Structures and Algorithms
- Discrete Mathematics

Spring 2022

- Computation and Formal Models
- Linear Algebra and Differential Equations

Fall 2022

- Programming Languages Design and Implementation
- Introduction to AI
- Mobile and Visual Computing

Spring 2022

- Intro to Abstract Algebra Honors
- Intro to Topology Honors
- Type Theory and Category Theory (Independent Study)
- Machine Checked Proofs with Coq

Graduate Coursework

Fall 2023 Algebra I, Analysis I, General Topology, Algebraic Number Theory
Spring 2024 Graduate Algebra II, Graduate Analysis II
Fall 2024 Topics in Algebraic Combinatorics (unofficially auditing), Algebraic Topology (with Ravanel)
Spring 2025 (intended) Topics in Algebraic Curves, Computer Models, Computational Complexity

Math in Moscow (Online) Jan 2024 - Present
Spring 2024 Riemann Surfaces, Homological and Commutative Algebra
Fall 2024 Representation Theory, Algebraic Geometry

Research Experience

Summer 2022
Research in Computer Science, Mentor: Chen Ding,
Topic: Data Movement Complexity: memory aware algorithm analysis.

Fall 2022
Undergraduate Research Assistant, Supervisor: Chen Ding

Topic: Data Movement Complexity: applications to essential algorithms in machine learning,

Summer 2023

ROMUS REU (Ohio State University), Mentor: Gabriel Conant

Topic: Combinatorics and Group Theory motivated by stability theory (model theory).

Papers

DMC4ML: Data Movement Complexity for Machine Learning

Pending paper in collaboration with Aycin Iplikci Arodirik, Gabriel Conant, David Zeng (from ROMUS)

Reading Groups, Talks Given, and Conferences/Workshops Attended

Spring 2023

- Discrete Fourier Analysis Reading Course, Mentor: Brian McDonald

May 2023

- *A Survey of Type Theory, Logic and Category Theory*, given at Computer Science Systems Seminar

Aug 2023

- *Bounding VC-Dimension in Non-abelian Groups,* presented at Young Mathematician's Conference

Spring 2024

- Class Field Theory Reading Group, Mentor: John Lin

Fall 2024

- Reading Group in Algebraic Geometry (using The Rising Sea), **Lead Organizer**

Sept 2024

- *Introduction to Category Theory,* preliminary talk in reading group open to all undergraduates

Nov 2024

- Western Algebraic Geometry Seminar (Attending)

Teaching Experience

Fall 2022

- TA for Programming Languages Design and Implementation

Spring 2023

- TA For Computer Organization

Fall 2023

- TA for Programming Languages Design and Implementation
- Computer Science Undergraduate Council tutor

Spring 2024

- TA for Programming Languages Design and Implementation
- Computer Science Undergraduate Council tutor