

Zawad Chowdhury

✉ zawadx@uw.edu | 🌐 sites.math.washington.edu/~zawadx/ | 📅 September 30, 2026

Education

- 2023 – University of Washington
- PhD student in Mathematics, advised by Rekha Thomas and Stefan Steinerberger.
 - Research interests include combinatorics, graph theory, discrete geometry and optimization.
 - **Selected Courses:** Graduate Linear Algebra, Integer Programming, Semidefinite Programming.
- 2019 – 23 Massachusetts Institute of Technology
- S.B. in Mathematics, Minor in Writing and Computer Science, GPA 5.0/5.0.
 - **Selected Courses:** Introduction to Machine Learning, Fundamentals of Statistics, Discrete Geometry, Elements of Software Construction, Design and Analysis of Algorithms.

Publications

- 2026 Zawad Chowdhury and Rekha Thomas. “Uniformly Weighted Graphical Designs.” Preprint available at [arXiv:2608.27624](https://arxiv.org/abs/2608.27624).
- 2025 Zawad Chowdhury, Francois Clement and Max Horwitz. “Obtaining the Chamanara Surface from the van der Corput sequence.” Preprint available at [arXiv:2511.00311](https://arxiv.org/abs/2511.00311).
- 2025 Zawad Chowdhury, Stefan Steinerberger and Rekha Thomas. “Graphical Designs find Combinatorial Structures.” Preprint available at [arXiv:2507.13327](https://arxiv.org/abs/2507.13327).
- 2023 Carina Kauf, Anna A. Ivanova, Giulia Rambelli, Emmanuele Chersoni, Jingyuan Selena She, Zawad Chowdhury, Evelina Fedorenko, and Alessandro Lenci. “Event knowledge in large language models: the gap between the impossible and the unlikely.” *Cognitive Science* 47, no. 11 (2023).
- 2021 Zawad Chowdhury, Samuel Everett, Sam Freedman, and Destine Lee. “Computing Periodic Points on Veech Surfaces.” *Geom. Dedicata* 217.4 (2023): 66.

Talks

- Oct 2025 Graphical Designs find Combinatorial Structures
- Delivered at the 5th SIAM Pacific Northwest Section meeting, the UW Combinatorics and Geometry Seminar, the 2026 JMM, and the 2026 SIAM Conference on Optimization.
- Jun 2025 Graphical Designs of the Hypercube Graph, UW Writing Milestone Seminar.
- May 2025 Rank Jumps of Abelian Varieties in Field Extensions, AMS Spring Western Meeting.

Research Experience

- 2022 Quantitative Research Intern at Jump Trading
- Developed execution code for Trading Strategies competition, which beat other teams by 20%.
 - Implemented new models for price prediction pipeline, improving robustness by 25%.
- 2021 Undergraduate Researcher at ICERM
- Attended Summer@ICERM program for computational research on billiards and flat surfaces.
 - Developed a software package extending Sage’s flat surface library.
- 2020 – 21 Lab Assistant: 6.036 Introduction to Machine Learning
- Taught concepts including neural networks, reinforcement learning and transformers.
 - Lead lab sections and ran office hours for a 200+ student class.

- 2020 – 21 Undergraduate Research Assistant at Evlab
- Completed a supervised research project investigating inner voice using fMRI data.
 - Analyzed over 500 fMRI scans, creating a comprehensive database for resting state brain data.

Teaching & Mentorship

- 2026 Predoctoral Instructor, UW Math Department
- Taught linear optimization (Math 407) to a class of 46 students.
 - Introduced novel evaluations, including video presentations and midterm reflections.
- 2025 Washington Experimental Mathematics Laboratory
- Statistical model selection over partially ordered sets, Spring 2025, under Armeen Taeb.
- 2025 Washington Directed Reading Program
- Introduction to Analytic Number Theory, Winter 2025.
 - Graph Theory Through Problem Solving, Spring 2026.
- 2023 – Teaching Assistant, UW Math Department
- Math 124, 126, 207, 318, 327, 381 and 396.
- 2021 – 22 Undergraduate Assistant, MIT Math Department
- 18.701 (Algebra I), Fall 2021 and Fall 2022.
- 2022 MIT Math Learning Center Tutor

Honors

- 2025 Craig McKibben & Sarah Merner Fellowship, University of Washington
- 2024 Academic Excellence Award, University of Washington
- 2023 Phi Beta Kappa, Xi Chapter
- 2018 Gold Medal, 59th International Mathematical Olympiad
- 2017 National Champion, 15th Bangladesh Mathematical Olympiad

Service & Leadership

- 2025 – 26 UW Mathematics Graduate Student Representative
- 2024 – 25 UW Graduate and Professional Student Senate
- 2021 – 23 MIT Committee on the Undergraduate Program
- 2020 – 23 MIT Committee on Curricula
- 2022 – 23 MIT Dormitory Council; President, Housing Chair and Rex Chair
- 2020 – 23 MIT Educational Studies Program; Chair and Program Director
- 2021 – 23 East Campus Renovations Committee
- 2022 MIT East Side Festival; Lead Organizer
- 2021 Bangladesh Team at European Girl's Mathematical Olympiad; Deputy Leader

Skills and Interests

- Software Python (pandas, numpy, SageMATH), Typescript, MATLAB, LaTeX, HTML, CSS.
- Projects Hierarchical Deep Reinforcement Learning as a Model for Free Play, Designed and developed a dynamic website using React.
- Interests Writing (Science Fiction and Fantasy), Tabletop Roleplaying, Education Policy, Community Organizing, Ukulele.