Zawad Chowdhury

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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.

2019 – 23 Massachusetts Institute of Technology
- S.B. in Mathematics, Minor in Writing and Computer Science, GPA 5.0/5.0.

Publications

2025 Zawad Chowdhury, Stefan Steinerberger and Rekha Thomas. "Graphical Designs find Combinatorial Structures." Preprint available at arXiv: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): e13386.

2021 Zawad Chowdhury, Samuel Everett, Sam Freedman, and Destine Lee. "Computing Periodic Points on Veech Surfaces." *Geom. Dedicata* 217.4 (2023): 66.

Research Experience

2022 Quantitative Research Intern at Jump Trading
- Developed execution code for Trading Strategies competion, 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 Undergraduate Research Assistant at Evlab
- Completed a supervised research project investigating inner voice using fMRI data.

Teaching & Mentorship

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.

2023 – Teaching Assistant, UW Math Department
- Math 124, 126, 207, 327 and 396.

2021 – 22 Undergraduate Assistant, MIT Math Department
- 18.701 (Algebra I), Fall 2021 and Fall 2022.

2022 MIT Math Learning Center Tutor

2020 – 21 Lab Assistant: 6.036 Introduction to Machine Learning

Talks

Oct 2025   Graphical Designs find Combinatorial Structures
- Forthcoming at 5th Biennial Meeting of the Pacific Northwest Section of SIAM as well as the UW Combinatorics and Geometry Seminar.

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.

Jan 2025   Graphical Design is My Passion, UW 1-2-3 Seminar.

Honors

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 –   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.