

Mursalin Habib

PhD Student · Rutgers University

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Research Interests

I am broadly interested in all things theoretical computer science. My current research is focused on the theory of error-correcting codes and fine-grained complexity.

Education

Rutgers University
PhD in Computer Science

New Brunswick, USA
2023 - present

Bangladesh University of Engineering and Technology
BSc in Computer Science and Engineering

Dhaka, Bangladesh
2016 - 2021

Publications

PREPRINTS

- **Constant Rate Isometric Embeddings of Hamming Metric into Edit Metric**

Joint work with Sudatta Bhattacharya, Sanjana Dey, Elazar Goldenberg, Bernhard Haeupler, Karthik C. S. and Michal Koucký

PUBLISHED PAPERS

- **Algorithmic Improvements to List Decoding of Folded Reed-Solomon Codes**

Joint work with Vikrant Ashvinkumar and Shashank Srivastava
In the Proceedings of ACM-SIAM Symposium on Discrete Algorithms (SODA), 2026.

- **Hardness of Median and Center in the Ulam Metric**

Joint work with Nick Fischer, Elazar Goldenberg and Karthik C. S.
In the Proceedings of European Symposium on Algorithms (ESA), 2025.

- **Explicit Good Codes Approaching Distance 1 in Ulam Metric**

Joint work with Elazar Goldenberg and Karthik C. S.
In the Proceedings of the IEEE International Symposium on Information Theory (ISIT), 2024.
In **IEEE Transactions on Information Theory** (Volume: 71, Issue: 7, July 2025).

Selected Talks

September 2025. *Hardness of Center and Median in the Ulam Metric*. 2025 European Symposium on Algorithms, Warsaw, Poland.

April 2025. *Constant Rate Isometric Embeddings of Hamming Metric into Edit Metric*. Columbia Theory Lunch, New York, NY, USA.

April 2025. *Constant Rate Isometric Embeddings of Hamming Metric into Edit Metric*. NYU Theory Seminar, New York, NY, USA.

January 2025. *Constant Rate Isometric Embeddings of Hamming Metric into Edit Metric*. Rutgers/DIMACS Theory of Computing Seminar, Piscataway, NJ, USA.

July 2024. *Explicit Good Codes Approaching Distance 1 in Ulam Metric*. 2024 IEEE International Symposium on Information Theory, Athens, Greece.

May 2024. *Explicit Good Codes Approaching Distance 1 in Ulam Metric*. DIMACS Workshop on Efficient Algorithms for High Dimensional Metrics: New Tools, Piscataway, NJ, USA.

Academic Honors & Awards

- 2024, 2025 Outstanding Teaching Assistant Award, Rutgers Computer Science Department
- 2024 ISIT 2024 Student Travel Grant, IEEE Information Theory Society
- 2017–2021 University Merit Scholarship, Bangladesh University of Engineering and Technology
- 2017–2021 Dean's List Award, Bangladesh University of Engineering and Technology
- 2015 Champion, Bangladesh Mathematical Olympiad

Service

SERVED AS REFEREE

Conferences: SOSA 2026, CCC 2025, ESA 2024, WALCOM 2023, WALCOM 2021, COCOON 2021, IWOCA 2020.

Journals: Theoretical Computer Science, Algorithmica, Journal of Graph Algorithms and Applications.

OTHER SERVICES

- 2022 Deputy Leader, Team Bangladesh, European Girls' Mathematical Olympiad
- 2021 Observer, Team Bangladesh, International Mathematical Olympiad
- 2020–2021 Academic Coordinator, Bangladesh Mathematical Olympiad

Research Visits

Institute for Computer Science, Artificial Intelligence and Technology (INSAIT)

Host: Amir Abboud and Bernhard Haeupler

*Sofia, Bulgaria
Fall 2024*

Teaching Experience

AT RUTGERS

- Spring 2025 Automata and Formal Languages (01:198:452), Teaching Assistant
- Spring 2024 Discrete Structures I (01:198:205), Teaching Assistant
- Fall 2023 Automata and Formal Languages (01:198:452), Teaching Assistant

OTHER TEACHING

- July 2024 DIMACS Tutorial on Fine-grained Complexity, Teaching Assistant