Rohan Goyal

CONTACT INFORMATION

Massachusetts Institute of Technology
32 Vassar St., Cambridge, MA

rohan_g@mit.edu
www.goyal-rohan.github.io

RESEARCH INTERESTS

I am broadly interested in theoretical computer science. In particular, I focus on notions of robustness: error-correcting codes, expander graphs, proof systems etc.

EDUCATION

Massachusetts Institute of Technology — September 2024-Present
PhD. in Computer Science — Cambridge, MA, USA
Advisor: Yael Tauman Kalai — **GPA**: 5.0/5.0

Massachusetts Institute of Technology — September 2024-December 2025 (Expected)
SM in Computer Science — Cambridge, MA, USA

Chennai Mathematical Institute, Chennai, India — September 2021-April 2024
B.Sc.(Honours) in Mathematics and Computer Science — **CGPA:** 9.62/10.0

PUBLICATIONS AND PREPRINTS

- *Fast list-decoding of univariate multiplicity and folded Reed-Solomon codes* [FOCS 2024, Chicago] [ArXiV] [ECCC]
  with Prahladh Harsha, Mrinal Kumar, and Ashutosh Shankar.
- *Efficiently Batching Unambiguous Interactive Proofs* [FOCS 2025, Sydney] [ArXiV]
  with Bonnie Berger, Matthew Hong, and Yael Tauman Kalai.
- *Optimal Proximity Gaps for Subspace-Design Codes and (Random) Reed-Solomon Codes* [Preprint] [ECCC]
  with Venkatesan Guruswami
- *Fast list-recovery of univariate multiplicity and folded Reed-Solomon codes* [Preprint]
  with Prahladh Harsha, Mrinal Kumar, and Ashutosh Shankar.
- *Structure Theorems (and Fast Algorithms) for List Recovery of Subspace-Design Codes* [Preprint]
  with Venkatesan Guruswami

INTERNSHIPS, RESEARCH PROJECTS

Tata Institute of Fundamental Research, Navy Nagar, Mumbai, India
Intern — May 2023 - August 2023
Worked under Prahladh Harsha and Mrinal Kumar on problems related to error-correcting codes.

ENS Paris, 45 Rue d'Ulm, 75005 Paris, France
Intern — May 2024 - June 2024
Worked under David Saulpic and Frédéric Magniez on problems related to clustering algorithms. This internship was a part of the CMI-ENS exchange program.

Talks

Fast list-decoding of univariate multiplicity and folded Reed-Solomon codes:
- University of Copenhagen; BARC Research Center — January 2025
- Chennai Mathematical Institute, Computer Science Seminar — January 2025

Efficiently Batching Unambiguous Interactive Proofs:
- *MIT CIS Seminar* — November 2025

Service

Subreviewed for FOCS and ACM Transactions on Algorithms.

TAing Experience

I have served as a TA at CMI for:

- Discrete Mathematics — Spring 2023, 2024
- Complexity Theory — Spring 2023
- Theory of Computation — Fall 2022

HONORS AND AWARDS

Deputy Leader India, **European Girls Mathematics Olympiad 2023** Indian team	2023
Observer A India, **International Mathematical Olympiad**	2024
Bronze Medal at **International Mathematical Olympiad (IND1)**	2021
Sriram Scholarship: Complete tuition fee waiver for attending CMI	2021-2024
Kishore Vigyanik Pratyogita Yojana (KVPY) Scholarship (All India Rank Top 100)	2021-2024

MATH TEACHING EXPERIENCE AND OUTREACH

I have been heavily involved with various mathematics competitions, training programs, and Olympiads. I have taught, helped set exams, proposed problems, and been a leader for various Indian Mathematical Olympiad teams as well including the EGMO team in 2023 and the IMO team in 2024. For more information or to discuss opportunities, please write to me.