Pratik Shastri

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Education

The Institute of Mathematical Sciences, Chennai **2021 – Present**
Graduate Student, Theoretical Computer Science
Advisor: C Ramya

IIIT Bangalore **2015 – 2020**
Integrated MTech, Computer Science and Engineering
Thesis: Autonomous traffic lights: A study in the behaviour and optimization of autonomous traffic light agents.

Research

I am interested in Computational Complexity Theory. More specifically, I have worked on problems related to lower bounds and identity testing in Algebraic Complexity Theory.

Publications

- Lower Bounds for Planar Arithmetic Circuits - **ITCS 2024**, Joint work with C. Ramya
- Efficient Polynomial Identity Testing Over Nonassociative Algebras - **RANDOM 2025**, Joint work with Partha Mukhopadhyay and C. Ramya
- On the Hardness of Order Finding and Equivalence Testing for ROABPs - **FSTTCS 2025**, Joint work with C. Ramya

Preprints

- Lower Bounds for Noncommutative Circuits with Low Syntactic Degree

Experience

Teaching Assistantship

- Theory of Computation, *The Institute of Mathematical Sciences, Chennai* (2025)
- Computational Complexity Theory, *The Institute of Mathematical Sciences, Chennai* (2024)
- Discrete Mathematics, *The Institute of Mathematical Sciences, Chennai* (2023)

Talks and Presentations

- Efficient Polynomial Identity Testing Over Nonassociative Algebras, **RANDOM 2025, 20-minute talk @ UC Berkeley, CA, USA**
- Lower Bounds for Planar Arithmetic Circuits, **ITCS 2024, 20-minute Online talk**

- Lower and upper bounds for sums of powers of linear forms, **TCS Summer School, IMSc Chennai** (2023)

I organize weekly Computational Complexity reading group meetings at IMSc Chennai.

Interests

Apart from reading for research, I like reading fiction. I also enjoy playing tennis and chess.