

# TULASIMOHAN MOLLI

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## About me

I am currently a PhD student in the School of Technology and Computer Science at Tata Institute of Fundamental Research, Mumbai. I am advised by Prof. Prahladh Harsha. I am expected to graduate by March 2023.

I am interested in Circuit complexity, Query complexity, Communication complexity, Analysis of Boolean Functions, Coding theory and other related areas in Complexity.

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## Education

<b>Tata Institute of Fundamental Research</b> <i>PhD in Computer Science</i> Advisor: Prof. Prahladh Harsha	2014- present
<b>Chennai Mathematical Institute</b> <i>Master of Science in Computer Science</i>	2012 - 2014
<b>Chennai Mathematical Institute</b> <i>Bachelors of Science(Honours) in Mathematics and Computer Science</i>	2009 - 2012

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## Publications

### Criticality of $AC^0$ -Formulae

*joint work with Prahladh Harsha and Ashutosh Shankar*

- currently under submission to STOC.
- 10.48550/ARXIV.2212.08397

### Tight Chang's-lemma-type bounds for Boolean functions

*joint work with Sourav Chakraborty, Manaswi Parashar, Nikhil Mande, Rajat Mittal and Swagato Sanyal*

- In Proc. 41st IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, FSTTCS 2021, December 15-17, 2021, Virtual Conference
- arXiv:012.02335

### On the Probabilistic degree of OR over Reals

*joint work with Siddharth Bhandari, Prahladh Harsha and Srikanth Srinivasan*

- In Proc. 38th IARCS Conf. on Foundations of Software Technology & Theoretical Computer Science (FSTTCS) (Ahmedabad, India, 10-14 December), volume 122 of Leibniz International Proceedings in Informatics, pages 5:1-5:12, 2018. Schloss Dagstuhl.
- *Random Structures and Algorithms* 2021. [rsa.20991](#)
- arXiv:1812.01982

## Teaching

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- Instructor for undergrad level course on Discrete Structures and Computation at IISER, Berhampur in Fall of 2022.
- Teaching Assistant for courses on Discrete Mathematics, Theory of Computation at Chennai Mathematical Institute.

## Projects and Theses

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### **PhD Thesis: On complexity measures of Boolean functions**

*under the guidance of Prof. Prahladh Harsha, TIFR, Mumbai.*

### **Qualifier Project: On Lowerbounds for Depth 2 circuits with threshold and MOD gates**

*under the guidance of Prof. Arkadev Chattopadhyay, TIFR, Mumbai.*

### **Masters Thesis: On structural results in Arithmetic circuit complexity and applications to lowerbounds**

*under the guidance of Prof. Srikanth Srinivasan, IIT Bombay.*

## References

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