Tulasimohan Molli

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Assistant Professor, BITS Pilani Hyderabad Campus

Tulasimohan Molli is an Assistant Professor at BITS Pilani, Hyderabad Campus.

Research Interests

Broadly interested in Theory of Computing including areas like Complexity Theory, Circuit Complexity, Analysis of Boolean Functions, Communication Complexity, Query Complexity, Data Structures.

Education

Tata Institute of Fundamental Research, Mumbai
PhD in Computer Science
Junior Research Fellow (JRF) 2014–2016
Senior Research Fellow (SRF) 2016–2023
Thesis: On Complexity Measures of Boolean functions
Advisor: Prof. Prahladh Harsha

Chennai Mathematical Institute, Chennai 2012–2014
MSc in Computer Science

Chennai Mathematical Institute, Chennai 2009–2012
BSc (Honours) in Mathematics and Computer Science

Employment

- **Assistant Professor**, BITS Pilani Hyderabad Campus, India Jan 2026–Present
- **Postdoctoral Researcher**, University of Lisbon (FCUL), Portugal Jul 2023–Oct 2025

Visiting positions

- **Visiting Researcher**, Weizmann Insitute of Science, Rehovot, Israel. May–June 2018
- **Visiting Scientist**, IISER Berhampur, Odisha, India. Jan–May 2022

Publications

1. Bruno Loff, Michal Koucký, Tulasimohan Molli, Michael Saks.
   The natural proofs barrier against data-structure lower-bounds.
   In: 58th Annual ACM Symposium on Theory of Computing (STOC 2026). To appear, June 2026.

2. Prahladh Harsha, Tulasimohan Molli, Ashutosh Shankar.
   Criticality of AC^0-Formulae.
   In: 38th Computational Complexity Conference (CCC 2023), LIPIcs, Vol. 264, pp. 19:1–19:24.
   https://doi.org/10.4230/LIPIcs.CCC.2023.19

3. Siddharth Bhandari, Prahladh Harsha, Tulasimohan Molli, Srikanth Srinivasan.
   On the probabilistic degree of OR over the reals.
   Random Structures and Algorithms, 59(1): 53–67, 2021.
   https://doi.org/10.1002/rsa.20991

4. Sourav Chakraborty, Nikhil S. Mande, Rajat Mittal, Tulasimohan Molli, Manaswi Paraashar, Swagato Sanyal.
   Tight Chang's-lemma-type bounds for Boolean functions.
   CoRR, abs/2012.02335, 2020.
   https://arxiv.org/abs/2012.02335

5. Siddharth Bhandari, Prahladh Harsha, Tulasimohan Molli, Srikanth Srinivasan.
On the Probabilistic Degree of OR over the Reals.
In: 38th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2018), LIPIcs, Vol. 122, pp. 5:1–5:12.
https://doi.org/10.4230/LIPIcs.FSTTCS.2018.5

Teaching

- Data Structures and Algorithms (Tutorials and Labs)
BITS Pilani Hyderabad Campus, Jan 2026–Present
- Discrete Structures and Computation (Undergraduate course)
IISER Berhampur, Jan–May 2022
- Teaching Assistant for courses on Discrete Mathematics and Theory of Computation.
Chennai Mathematical Institute

Theses & Projects

- **PhD Thesis: On Complexity measures of Boolean functions**
Supervisor: Prahladh Harhsa, TIFR
- **Qualifier project: On Lower Bounds for Depth-2 Circuits with Threshold and MOD Gates**
Supervisor: Arkadev Chattopadhyay, TIFR
- **Master's Thesis: On Structural Results in Arithmetic Circuit Complexity**

Technical Skills

- Programming: Python, LaTeX
- Tools: Zotero, Git, Obsidian, Notion, Quarto

Professional Service

- Reviewer for: SODA'25, STOC'23, CCC'19, STACS'21 and SICOMP(Journal).
- Organised Annual STCS Day Seminars and Weekly Student Seminars during PhD at TIFR.
- Took part in TIFR outreach program for popularizing science among high school students in and around Mumbai.

References

- **Prof. Jaikumar Radhakrishnan**
ICTS-TIFR, Bengaluru
https://www.icts.res.in/people/jaikumar-radhakrishnan1
Email: jaikumar.radhakrishnan@icts.res.in
- **Prof. Prahladh Harsha**
Tata Institute of Fundamental Research
https://www.tcs.tifr.res.in/ prahladh/
Email: prahladh@tifr.res.in
- **Prof. Bruno Loff**
Faculty of Sciences, University of Lisbon
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