Vishvajeet Nagargoje

Bordeaux, France

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Employment

CNRS laboratory LaBRI, Université de Bordeaux, France **15 Oct, 2025 onwards**

- **Postdoctoral Researcher in Quantum Computation and Quantum Information**
- Part of the Quantum Computation and Quantum Information group at LaBRI; part of the CNRS lab system
- Host: Dr. Yassine Hamoudi
- Research: Quantum Algorithms and Complexity of Approximately Counting Discrete Structures
- Funding: Working under the CEA/GENCI grant Maisons du quantique - Noivelle-Aquitaine

University of Edinburgh, UK **1 Aug, 2022 - 31 Dec, 2024**

- **Postdoctoral Research Associate in Computer Science**
- Affiliated to the Laboratory for Foundations of Computer Science
- Host: Dr. Heng Guo
- Research: Fast Algorithms and Complexity of Approximate Counting of Computational Problems
- Funding: Working under ERC grant New Approaches to Counting and Sampling

Rutgers University, USA **Aug 2017 - July 2022**

- **Graduate Teaching and Research Assistant**
- Employed of the university while doing PhD engaged in teaching and research. Tuition waiver granted.
- Research: Algorithms and Complexity Theory

Microsoft Research, India **May - Aug 2016**

- **Research Intern**
- Mentor: Dr. Satya Lokam
- Area: Analysis of Boolean Functions, Sensitivity Conjecture

Tata Institute of Fundamental Research, Mumbai, India **May - Oct 2015**

- **Research Intern**
- Mentor: Dr. Prahladh Harsha
- Area: Coding Theory

Education

Rutgers University **Aug 2017 - July 2022**

- PhD in Computer Science
- Advisor: Dr. Swastik Kopparty
- Dissertation: Projections, Extractors, and Streaming Lower Bounds
- Dissertation Committee: Dr. Swastik Kopparty (chair), Dr. Eric Allender, Dr. Sepehr Assadi, Dr. Huacheng Yu

Indian Institute of Technology Madras **2012 - 2017**

- Bachelor and Master of Technology (BTech & MTech)
- Master's Thesis Advisor: Dr. Prabhu Rajagopal and Dr. Radhakrishna Ganti
- Master's Thesis: Optimization of Mechanical Systems via Lasserre Hierarchy of Semidefinite Programming Relaxations

Research Engagements

Institute for Advanced Study, Princeton **2022**

- Type: Visiting Graduate Research Student, School of Mathematics
- Area: Computer Science and Discrete Mathematics

Microsoft Research, India **May - Aug 2016**

- Type: Internship

- Mentor: Dr. Satya Lokam
- Area: Analysis of Boolean Functions, Sensitivity Conjecture
- Worked towards extending the approach of relating higher moments of sensitivity and degree of a general function to bounding decision-tree depth in terms of higher moment of sensitivity

Tata Institute of Fundamental Research, Mumbai, India **May - Oct 2015**

- Type: Internship
- Mentor: Dr. Prahladh Harsha
- Area: Coding Theory
- Surveyed Arikan's capacity-achieving deterministic coding schemes and fresh results surrounding the capacity-achieving capabilities of Reed-Muller codes, as part of the *Visiting Students' Research Program*
- Wrote an article on the area: *Codes That Achieve Capacity on Symmetric Channels* (arXiv:1510.01439[cs.IT]).

Publications

Deterministic Approximation for the Volume of the Truncated Fractional Matching Polytope
Heng Guo and **Vishvajeet N**
The 16th Innovations in Theoretical Computer Science (**ITCS 2025**)

Extracting Mergers and Projections of Partitions
Swastik Kopparty and **Vishvajeet N**
The 27th International Conference on Randomization and Computation (**RANDOM 2023**)

Graph Streaming Lower Bounds for Parameter Estimation and Property Testing via a Streaming XOR Lemma
Sepehr Assadi and **Vishvajeet N**
The 53rd Annual ACM Symposium on Theory of Computing (**STOC 2021**)

Invited Talks

Deterministic Approximation for the Volume of the Truncated Fractional Matching Polytope
Columbia University, USA
To be presented at the 16th Innovations in Theoretical Computer Science (**ITCS 2025**)

Extracting Mergers and Projections of Partitions
Georgia University of Technology, USA
Presented at the 27th International Conference on Randomization and Computation (**RANDOM 2023**)

Graph Streaming Lower Bounds for Parameter Estimation and Property Testing via a Streaming XOR Lemma
Online
Presented at the 53rd Annual ACM Symposium on Theory of Computing (**STOC 2021**)

Workshops Attended

Warwick Algorithms and Complexity Workshop **Sept 2024**
- University of Warwick, Coventry, UK

Cambridge Algorithms and Complexity Workshop **April 2024**
- University of Cambridge, Cambridge, UK

Computational Complexity of Statistical Inference **June 2023**
- MIT, Cambridge, UK

New Tools For Optimal Mixing of Markov Chains **Aug 2022**
- University of California, Santa Barbara, USA

Workshop on Algorithms for Large Data **Aug 2021**
- Online

Monthly Meeting of the Simons Collaboration on Algorithms and Geometry **2019/2020**
- Flatiron Institute, NYC, USA

Interactive Complexity **Oct 2018**
- Simons Institute for the Theory of Computing, Berkeley

Workshop on Local Algorithms **June 2018**
- MIT, Cambridge, UK

Sublinear Algorithms, Local Algorithms and Robust Statistics **June 2018**
- MIT, Cambridge, UK

Avi Wigderson is 60 - A Celebration of Mathematics and Computer Science **Oct 2016**
- Institute for Advanced Study, Princeton, USA

Teaching Experience

I have been a Teaching Assistant for the following courses at Rutgers University:

Introduction to Discrete Structures II (CS 206) **Spring 2021**
Introduction to Discrete Structures I (CS 205) **Spring 2020**
Design and Analysis of Computer Algorithms (CS 344) **Fall 2019**
Introduction to Calculus I (MATH 135) **Spring 2019**
Design and Analysis of Data Structures and Algorithms (CS 513) **Fall 2018**
Introduction to Discrete Structures II (CS 206) **Spring 2018**
Design and Analysis of Data Structures and Algorithms (CS 513) **Fall 2017**

References

Dr. Heng Guo

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Dr. Mark Jerrum

Professor,
School of Mathematical Sciences,
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Dr. Swastik Kopparty

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