

DR. VISHVAJEET NAGARGOJE

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<https://nvishvajeet.github.io>

EMPLOYMENT

University of Bordeaux, France 1 Sept, 2025 onwards

- **Postdoctoral Researcher in Quantum Computation and Quantum Information**
- Part of the Quantum Computation and Quantum Information group at LaBRI with a pre-acceptance negotiated freedom to travel for research
- 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 - Nouvelle-Aquitaine

Dr. Vishwanath Karad MIT World Peace University, Pune, India 1 Jan, 2025 - present

- **Associate Professor**
- Jointly appointment in the School of Computer Science, and the School of Mathematics
- Research: Algorithms and Complexity Theory

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. 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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School of Informatics,
University of Edinburgh,
Edinburgh,
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Dr. Mark Jerrum

Professor,
School of Mathematical Sciences,
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Dr. Swastik Kopparty

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Department of Mathematics and
Department of Computer Science,
University of Toronto,
Toronto, Canada.

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Note: This document was last updated in August 2025.