Dr. Vishvajeet Nagargoje

nvishvajeet@gmail.com   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 - Noivelle-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

Reader,
School of Informatics,
University of Edinburgh,
Edinburgh,
UK.

hguo@inf.ed.ac.uk

Dr. Mark Jerrum

Professor,
School of Mathematical Sciences,
Queen Mary University of London,
London,
UK.

m.jerrum@qmul.ac.uk

Dr. Swastik Kopparty

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

swastik.kopparty@utoronto.ca

Note: This document was last updated in August 2025.