

VISHVAJEET N

Edinburgh, UK

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<https://nvishvajeet.github.io>

RESEARCH INTERESTS

I am broadly interested in **Theoretical Computer Science**.

EMPLOYMENT

University of Edinburgh

2022 - present

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

EDUCATION

Rutgers University

2017 - 2022

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

Indian Institute of Technology Madras

2012 - 2017

- Bachelor and Master of Technology
- Master's Thesis Advisor: Radhakrishna Ganti
- Master's Thesis: Optimization of Mechanical Systems via Lasserre Hierarchy of Semidefinite Programming Relaxations

RESEARCH ENGAGEMENTS

Institute for Advanced Study, Princeton

2019 - 2022

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

Microsoft Research, India

May - Aug 2016

- Type: Internship
- Mentor: 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: 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**)

WORKSHOPS ATTENDED

Warwick Algorithms and Complexity Workshop - University of Warwick, Coventry, UK	Sept 2024
Cambridge Algorithms and Complexity Workshop - University of Cambridge, Cambridge, UK	April 2024
Computational Complexity of Statistical Inference - MIT, Cambridge, UK	June 2023
New Tools For Optimal Mixing of Markov Chains - University of California, Santa Barbara, USA	Aug 2022
Workshop on Algorithms for Large Data - Online	Aug 2021
Monthly Meeting of the Simons Collaboration on Algorithms and Geometry - Flatiron Institute, NYC, USA	2019/2020
Interactive Complexity - Simons Institute for the Theory of Computing, Berkeley	Oct 2018
Workshop on Local Algorithms - MIT, Cambridge, UK	June 2018
Sublinear Algorithms, Local Algorithms and Robust Statistics - MIT, Cambridge, UK	June 2018
Avi Wigderson is 60 - A Celebration of Mathematics and Computer Science - Institute for Advanced Study, Princeton, USA	Oct 2016

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

Heng Guo

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Swastik Kopparty

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