Seyoon Ragavan

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EDUCATION

Massachusetts Institute of Technology June 2024-present
Ph.D. Candidate in Electrical Engineering and Computer Science

Massachusetts Institute of Technology September 2023-May 2024
S.M. in Electrical Engineering and Computer Science

Princeton University September 2017-May 2021
Bachelor of Arts in Mathematics, Highest Honours GPA: 3.96
Certificates in Applications of Computing, Applied Mathematics, and Cognitive Science

PUBLICATIONS

- Seyoon Ragavan, Neekon Vafa, and Vinod Vaikuntanathan. Indistinguishability obfuscation from bilinear maps and LPN variants. [TCC 2024]
- Seyoon Ragavan and Vinod Vaikuntanathan. Space-efficient and noise-robust quantum factoring. **Best Paper Award.** [CRYPTO 2024, ePrint]
- Orestis Plevrakis, Seyoon Ragavan, and S. Matthew Weinberg. On the cut-query complexity of approximating max-cut. [ICALP 2024, arXiv]
- Ryan Arbon, Mohammed Mannan, Michael Psenka, and Seyoon Ragavan. A proof of the triangular Ashbaugh–Benguria–Payne–Pólya–Weinberger inequality. [Journal of Spectral Theory, 2022]
- Arjun Sai Krishnan and Seyoon Ragavan. Morphology-aware meta-embeddings for Tamil. [NAACL Student Research Workshop 2021]

MANUSCRIPTS

- Seyoon Ragavan. Regev factoring beyond Fibonacci: optimizing prefactors. [ePrint]

TALKS

Indistinguishability Obfuscation from Bilinear Maps and LPN Variants

- MIT CIS Seminar (September 2024)

Space-Efficient and Noise-Robust Quantum Factoring

- CRYPTO 2024 (August 2024)
- IBM Quantum Seminar (November 2023)
- Yale Quantum Institute (November 2023)

The Cut-Query Complexity of Approximating Max-Cut

- ICALP 2024 (July 2024)

AWARDS AND FELLOWSHIPS

CRYPTO 2024 Best Paper Award 2024
Akamai Presidential Fellowship, MIT 2023-24
George B. Covington Prize in Mathematics, Princeton University (top prize for overall excellence in mathematics) 2021
Phi Beta Kappa, elected to the Princeton chapter 2021
Sigma Xi, elected to the Princeton chapter 2021
Peter Greenberg Memorial Prize, Princeton University (for junior accomplishments in mathematics) 2020
Putnam Competition, Honorable Mention (top 100 participants across colleges in the USA) 2017-2019
Shapiro Prize for Academic Excellence, Princeton University (top 2% undergraduate students) 2019
Manfred Pyka Memorial Prize in Physics, Princeton University 2018
International Mathematical Olympiad, represented Australia four times: 1 gold and 3 bronze medals 2013-2016

SELECTED COURSEWORK

Massachusetts Institute of Technology

- Foundations of Cryptography
- Quantum Cryptography
- Advanced Topics in Cryptography: Proof Systems
- Advanced Topics in Cryptography: From Lattices to Program Obfuscation
- Advanced Complexity Theory

Princeton University

- Advanced Algorithm Design
- Information Theory
- Graph Algorithms
- Learning Theory
- Natural Language Processing
- Analytic Number Theory
- Quantum Mechanics

TEACHING AND MENTORING

TA for Economics and Computing at Princeton University 2019
Trainer and grader for Australia's International Mathematical Olympiad team 2017, 2020-present
Peer Academic Advisor (for 30 first-years and sophomores) 2019-2021

EXPERIENCE

Citadel Securities, *Quantitative Research Analyst* August 2021-January 2023

Citadel Securities, *Quantitative Research Analyst Intern* Summer 2020

Princeton University, *Research Intern, Theoretical Machine Learning* Summer 2019

Afari (student-founded social media startup), *Software Intern* Summer 2018

INTERESTS AND SKILLS

Languages: English, Tamil
Technical: Python, NumPy, pandas, scikit-learn, xarray, PyTorch, Slurm, AWS, C++, Java
Music: Mridangam (South Indian classical drum), drum kit, voice