Seyoon Ragavan

sragavan@mit.edu | sragavan99.github.io

32 Vassar St, G-578 - Cambridge, MA 02139 - USA

EDUCATION

• **Massachusetts Institute of Technology** *June 2024 - present*
Ph.D. Candidate in Electrical Engineering and Computer Science Cambridge, MA

• **Massachusetts Institute of Technology** *September 2023 - May 2024*
S.M. in Electrical Engineering in Computer Science Cambridge, MA

• **Princeton University** *September 2017 - May 2021*
Bachelor of Arts in Mathematics, Highest Honours Princeton, NJ
  ◦ Certificates in Applications of Computing, Applied Mathematics, and Cognitive Science
  ◦ GPA: 3.96/4

PUBLICATIONS

[1] Gregory D. Kahanamoku-Meyer, Seyoon Ragavan, and Katherine Van Kirk. Parallel spooky pebbling makes Regev factoring more practical. [QIP 2026, ePrint, code]

[2] Alexander Poremba, Seyoon Ragavan, and Vinod Vaikuntanathan. Cloning games, black holes and cryptography. [QIP 2026, ePrint]

[3] Gregory D. Kahanamoku-Meyer, Seyoon Ragavan, Vinod Vaikuntanathan, and Katherine Van Kirk. The Jacobi factoring circuit: quantum factoring with near-linear gates and sublinear space. [STOC 2025, QIP 2026, ePrint]

[4] Seyoon Ragavan, Neekon Vafa, and Vinod Vaikuntanathan. Indistinguishability obfuscation from bilinear maps and LPN variants. [TCC 2024, ePrint]

[5] Seyoon Ragavan and Vinod Vaikuntanathan. Space-efficient and noise-robust quantum factoring. **Best Paper Award, invited to the Journal of Cryptology.** [CRYPTO 2024, ePrint]

[6] Orestis Plevrakis, Seyoon Ragavan, and S. Matthew Weinberg. On the cut-query complexity of approximating max-cut. [ICALP 2024, arXiv]

[7] 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, code]

[8] Arjun Sai Krishnan and Seyoon Ragavan. Morphology-aware meta-embeddings for Tamil. [NAACL Student Research Workshop 2021]

MANUSCRIPTS

[1] Alexandra Henzinger and Seyoon Ragavan. Two-server private information retrieval in sublinear time and quasilinear space. [ePrint, code]

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

TALKS

The Jacobi Factoring Circuit: Classically Hard Factoring in Sublinear Quantum Space and Depth

• Tufts University Quantum Computing Seminar *September 2025*
• UNSW Number Theory Days *August 2025*
• Ruhr University Bochum Quantum Information Workshop *April 2025*
• Simons Institute Quantum Colloquium *March 2025*
• MIT Quantum Information Seminar *March 2025*
• CMU Theory Seminar *March 2025*

Cloning Games, Black Holes and Cryptography

• CMU CyLab Crypto Seminar *March 2025*

Factoring with a Quantum Computer: The State of the Art

• University of Technology Sydney *August 2025*
• University of Sydney *August 2025*
• QuEra Computing, with Gregory D. Kahanamoku-Meyer and Katherine Van Kirk *April 2025*
• MIT Schwarzman College of Computing Cryptography and Security Day *January 2025*

Indistinguishability Obfuscation from Bilinear Maps and LPN Variants

• MIT Cryptography and Information Security 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

• **William A. Martin S.M. Thesis Award**	*2025*
Massachusetts Institute of Technology (for outstanding master's theses in computer science)	
• **Jane Street Graduate Research Fellowship**, finalist	*2025*
• **CRYPTO 2024 Best Paper Award**	*August 2024*
• **Akamai Presidential Fellowship**, MIT	*September 2023 - May 2024*
• **George B. Covington Prize in Mathematics**	*May 2021*
Princeton University (top prize for overall excellence in mathematics)	
• **Phi Beta Kappa**, elected to the Princeton chapter	*May 2021*
• **Sigma Xi**, elected to the Princeton chapter	*May 2021*
• **Peter Greenberg Memorial Prize**	*May 2020*
Princeton University (for junior accomplishments in mathematics)	
• **Putnam Competition**	*2017-2019*
Honourable Mention (top 100 participants across colleges in the USA)	
• **Shapiro Prize for Academic Excellence**	*2019*
Princeton University (top 2% of undergraduate students)	
• **Manfred Pyka Memorial Prize in Physics**, Princeton University	*2018*
• **International Mathematical Olympiad**	*2013-2016*
Represented Australia four times: 1 gold and 3 bronze medals	

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 SERVICE

• **Program Committee Member**, QIP	*2025-2026*
• **Teaching Assistant**, MIT (Mathematics for Computer Science)	*Fall 2025*
• **International Mathematical Olympiad**	*2025*
Problem Selection Committee Member and Coordinator (Grader)	
• **Trainer and Grader**, for Australia's International Mathematical Olympiad team	*2017, 2020-2024*
• **Teaching Assistant**, Princeton University (Economics and Computing)	*Spring 2019*
• **Peer Academic Advisor**, Princeton University (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 Engineering 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