

# Seyoon Ragavan

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USA

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## EDUCATION

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**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

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- 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, [ePrint](#)]
- 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

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- Alexander Poremba, Seyoon Ragavan, and Vinod Vaikuntanathan. Cloning games, black holes and cryptography. [[ePrint](#)]
- Seyoon Ragavan. Regev factoring beyond Fibonacci: optimizing prefactors. [[ePrint](#)]

## TALKS

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

- Simons Institute Quantum Colloquium (March 2025, [video](#))
- MIT Quantum Information Seminar (March 2025)
- CMU Theory Seminar (March 2025)

### Cloning Games, Black Holes and Cryptography

- CMU CyLab Crypto Seminar (March 2025, [video](#))

### Factoring with a Quantum Computer: The State of the Art

- MIT Schwarzman College of Computing Cryptography and Security Day (January 2025, [video](#))

### 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

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

### SELECTED COURSEWORK

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#### 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

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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

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<b>Citadel Securities</b> , <i>Quantitative Research Analyst</i>	August 2021-January 2023
<b>Citadel Securities</b> , <i>Quantitative Research Analyst Intern</i>	Summer 2020
<b>Princeton University</b> , <i>Research Intern, Theoretical Machine Learning</i>	Summer 2019
<b>Afari</b> (student-founded social media startup), <i>Software Intern</i>	Summer 2018

### INTERESTS AND SKILLS

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**Languages:** English, Tamil

**Technical:** Python, NumPy, pandas, scikit-learn, xarray, PyTorch, Slurm, AWS, C++, Java

**Music:** Mridangam (South Indian classical drum), drum kit, voice