

JOSEPH SLOTE

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PhD Candidate in Computer Science

Quantum Computing, Complexity Theory, Analysis of Boolean Functions

EDUCATION

- California Institute of Technology**, Pasadena, CA *Sep 2020 - Jun 2025 (Exp.)*
PhD Candidate in Computer Science; *Adv.* Chris Umans
- University of Oxford**, Oxford, UK *Oct 2016 - Sep 2017*
MSc in Mathematics and the Foundations of Computer Science
- Carleton College**, Northfield, MN *Sep 2012 - Jun 2016*
BA in Mathematics, *magna cum laude*

PUBLICATIONS

(author order is alphabetical)

- F. Jeronimo, N. Magrafta, J. Slote, and P. Wu. Coherence in Property Testing: Quantum-Classical Collapses and Separations. QIP 2025. [arXiv:2411.15148](https://arxiv.org/abs/2411.15148).
- L. Becker, O. Klein, J. Slote, A. Volberg, and H. Zhang. Dimension-free discretizations of the uniform norm by small product sets. *Invent. Math.* (2024). [doi:10.1007/s00222-024-01306-9](https://doi.org/10.1007/s00222-024-01306-9).
- J. Slote. Parity vs. AC^0 with simple quantum preprocessing. ITCS 2024, TQC 2024. [arXiv:2311.13679](https://arxiv.org/abs/2311.13679).
- O. Klein, J. Slote, A. Volberg, and H. Zhang. Quantum and classical low-degree learning via a dimension-free Remez inequality. ITCS 2024, TQC 2024. [arXiv:2301.01438](https://arxiv.org/abs/2301.01438).
- J. Slote, A. Volberg, and H. Zhang. Bohnenblust-Hille inequality for cyclic groups, *Adv. Math.* **452** (2024), Paper No. 109824. [arXiv:2305.10560](https://arxiv.org/abs/2305.10560).
- (Preprint, submitted) M. Caro, P. Naik, and J. Slote. Testing classical properties from quantum data. [arXiv:2411.12730](https://arxiv.org/abs/2411.12730).
- (Preprint, submitted) J. Slote, A. Volberg, and H. Zhang. A dimension-free Remez-type inequality on the polytorus. [arXiv:2305.10828](https://arxiv.org/abs/2305.10828).

SELECTED TALKS

“A dimension-free Remez Inequality,” given in various formulations at:

- *Harmonic Analysis and Convexity*, ICERM Workshop, Brown University *Fall 2024*
- SUMIRFAS 2024, Texas A&M University *Summer 2024*
- CMX Seminar, Caltech *Spring 2024*
- Analysis Seminar, UC Irvine *Fall 2023*

“Fourier analysis in quantum circuit complexity,” given in various formulations at:

- Probability and Analysis Webinar *Spring 2023*
- *Extremal Problems in Harmonic Analysis*, ICERM Workshop, Brown University *Fall 2022*
- Columbia University *Fall 2022*
- AIM workshop, *Analysis on the hypercube with apps. to quantum computing* *Summer 2022*

“Noncommutative Bohnenblust–Hille Inequalities,” at:

- TreilVolberg Conference, University of Würzburg *Summer 2023*

ACADEMIC VISITS

Hausdorff Institute for Mathematics, Bonn University <i>Research Semester in Analysis of Boolean Functions</i>	<i>Fall 2024</i> (3 months)
Simons Institute for Computer Science, UC Berkeley. <i>Research Semester in Quantum Computing</i>	<i>Spring 2024</i> (3 months)
Stanford University, Mathematics department <i>Hosted by Alexander Volberg</i>	<i>Spring 2024</i> (1 week)
Columbia University, Computer Science department <i>Hosted by Henry Yuen</i>	<i>Fall 2022, Fall 2023</i> (3 weeks each)
UC Irvine, Mathematics department <i>Hosted by Haonan Zhang</i>	<i>Spring 2023</i> (1 week)
ICERM, Brown University <i>Research Semester in Harmonic Analysis, hosted by Irina Holmes Fay</i>	<i>Fall 2022</i> (2 weeks)

SERVICE

Organizer of “Analysis in TCS: testing, learning, and complexity,” a workshop at the research semester *Boolean Analysis in Computer Science* at the Hausdorff Institute for Mathematics, Bonn University, Fall 2024.

Co-organizer of the Probability and Analysis Webinar, Fall 2022 onward.

Reviewer for Quantum Journal, ITCS 2024, FOCS 2024, TQC 2024, QIP 2025, STOC 2025.

MathSciNet Reviewer, 2024 onward.