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

J. Slote. Parity vs. shallow circuits with simple quantum preprocessing. ITCS 2024 and TQC 2024.

O. Klein, J. Slote, A. L. Volberg, and H. Zhang. Quantum and classical low-degree learning via a dimension-free Remez inequality. ITCS 2024 and TQC 2024.

J. Slote, A. L. Volberg, and H. Zhang. Bohnenblust-Hille inequality for cyclic groups, *Adv. Math.* **452** (2024), Paper No. 109824.

L. Becker, O. Klein, J. Slote, A. L. Volberg, and H. Zhang. Dimension-free Remez Inequalities and norm designs. Preprint (Submitted), 2023. arXiv:2310.07926.

J. Slote, A. Volberg, and H. Zhang. A dimension-free Remez-type inequality on the polytorus. Preprint (Submitted), 2023. arXiv:2305.10828.

TALKS

"A dimension-free Remez Inequality." Given in various formulations SUMIRFAS 2024, Texas A&M University; Analysis Seminar, UC Irvine (Fall 2023); and CMX Seminar, Caltech (Spring 2024).

"Fourier analysis in quantum circuit complexity." Given in various formulations at: the AIM workshop, *Analysis on the hypercube with applications to quantum computing* (Summer 2022); the ICERM workshop, *Extremal Problems in Harmonic Analysis, Convexity, and Bellman Functions* (Fall 2022); at Columbia University (Fall 2022); and at the Probability and Analysis Webinar (PAW) (Spring 2023).

"Noncommutative Bohnenblust–Hille Inequalities with applications to low-degree learning." TreilVolberg Conference, University of Würzburg. Summer 2023.

ACTIVITY

Hausdorff Institute for Mathematics, Bonn University. Research Semester in Analysis of Boolean Functions. Fall 2024.

Simons Institute for Computer Science, UC Berkeley. Research Semester in Quantum Computing. Spring 2024.

Stanford University, hosted by Alexander Volberg. Spring 2024 (1 week).

Columbia University, hosted by Henry Yuen. Fall 2022 (3 weeks), Fall 2023 (3 weeks).

UC Irvine, hosted by Haonan Zhang. Spring 2023 (1 week).

ICERM Research Semester in Harmonic Analysis, hosted by Irina Holmes Fay. Fall 2022 (2 weeks).

SERVICE

Organizer of TCS workshop at Hausdorff Institute research semester, Fall 2024.

Reviewer for Quantum Journal, ITCS 2024, FOCS 2024, TQC 2024.

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

Organizer of "Analysis in TCS: testing, learning, and complexity," a workshop at the upcoming research semester *Boolean Analysis in Computer Science* at Bonn Univsersity, Fall 2024.

MathSciNet Reviewer, 2024 onward.