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 at: 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.

ACADEMIC VISITS

Hausdorff Institute for Mathematics, Bonn University — *Fall 2024*
Research Semester in Analysis of Boolean Functions — (3 months)

Simons Institute for Computer Science, UC Berkeley. — *Spring 2024*
Research Semester in Quantum Computing — (3 months)

Stanford University, Mathematics department — *Spring 2024*
Hosted by Alexander Volberg — (1 week)

Columbia University, Computer Science department — *Fall 2022, Fall 2023*
Hosted by Henry Yuen — (3 weeks each)

UC Irvine, Mathematics department — *Spring 2023*
Hosted by Haonan Zhang — (1 week)

ICERM Research Semester in Harmonic Analysis — *Fall 2022*
Hosted by Irina Holmes Fay — (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.

MathSciNet Reviewer, 2024 onward.