

JOSEPH SLOTE

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Postdoctoral scholar at the University of Washington

Computational complexity theory, Discrete and harmonic analysis, Quantum computing

EDUCATION

California Institute of Technology , Pasadena, CA PhD in Computer Science; <i>Adv.</i> Chris Umans	<i>Sep 2020 - Jun 2025</i>
University of Oxford , Oxford, UK MSc in Mathematics and the Foundations of Computer Science	<i>Oct 2016 - Sep 2017</i>
Carleton College , Northfield, MN BA in Mathematics	<i>Sep 2012 - Jun 2016</i>

RECOGNITION

Bhansali Family Doctoral Prize in Computer Science	Jun 2025
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JOURNAL PUBLICATIONS

(author order is alphabetical)

- L. Becker, O. Klein, J. Slote, A. Volberg, and H. Zhang. Dimension-free discretizations of the uniform norm by small product sets. *Inventiones mathematicae* (2025). [doi:10.1007/s00222-024-01306-9](https://doi.org/10.1007/s00222-024-01306-9).
- J. Slote, A. Volberg, and H. Zhang. A dimension-free Remez-type inequality on the polytorus. *Discrete Analysis* (2025). [doi:10.19086/da.137968](https://doi.org/10.19086/da.137968) and [arXiv:2305.10828](https://arxiv.org/abs/2305.10828).
- J. Slote, A. Volberg, and H. Zhang. Bohnenblust-Hille inequality for cyclic groups, *Advances in Mathematics* **452** (2024), Paper No. 109824. [arXiv:2305.10560](https://arxiv.org/abs/2305.10560).

CONFERENCE PUBLICATIONS (THEORETICAL CS)

(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).
- M. Caro, P. Naik, and J. Slote. Testing classical properties from quantum data. TQC 2025. [arXiv:2411.12730](https://arxiv.org/abs/2411.12730).
- 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. Parity vs. AC^0 with simple quantum preprocessing. ITCS 2024, TQC 2024. [arXiv:2311.13679](https://arxiv.org/abs/2311.13679).

PREPRINTS

- A. Bene Watts, J. W. Helton, C. R. Chen, J. Slote. Quantum precomputation: parallelizing cascade circuits and the Moore–Nilsson conjecture is false. *Submitted* (2025). [arXiv:2510.04411](https://arxiv.org/abs/2510.04411).
- L. Becker, J. Slote, A. Volberg, H. Zhang. Approximating the operator norm of local Hamiltonians via few quantum states. *Submitted* (2025). [arXiv:2305.10828](https://arxiv.org/abs/2305.10828).
- J. Slote, A. Volberg, H. Zhang. Noncommutative Bohnenblust–Hille inequality for qudit systems. *Submitted* (2024). [arXiv:2406.08509](https://arxiv.org/abs/2406.08509).

SELECTED TALKS

- “Quantum precomputation and a refutation of the Moore–Nilsson Conjecture” given at
- Theory Seminar, University of Washington *Summer 2025*
 - MFoQA workshop, Simon Fraser University *Spring 2025*
- “A dimension-free Remez Inequality,” given 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*
- “Noncommutative Bohnenblust–Hille Inequalities,” at:
- TreilVolberg Conference, University of Würzburg *Summer 2023*
- “Fourier analysis in quantum circuit complexity,” given in 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*

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, Brown University *Fall 2022*
Research Semester in Harmonic Analysis, 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 2022–2024.

Reviewer for Quantum Journal, ACM Transactions on Quantum Computing, FOCS, ITCS, QIP, STOC, TQC.