

# Vishnu Iyer

<http://vishnuiyer.org>

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## Education

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**University of Texas at Austin**

*August 2021 - present*

PhD in Quantum Computing, advised by Scott Aaronson. NSF Fellow.

**University of California at Berkeley**

*August 2016 - May 2020*

B.S. in Electrical Engineering and Computer Science with Highest Honors ( $\sim$  top 3%).

## Experience

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**Invited Student Researcher, Simons Institute**

*Spring 2024*

**Summer Research Intern, Sandia National Labs Quantum Group**

*Summer 2023*

**Graduate Student Researcher (UT Austin)**

*August 2021 - present*

**Undergraduate Student Researcher (UC Berkeley)**

*August 2018 - August 2021*

## Papers <sup>1</sup>

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13. *Efficient Quantum Hermite Transform* October 2025  
Siddhartha Jain<sup>†</sup>, **Vishnu Iyer**<sup>†</sup>, Rolando Somma, Ning Bao, Stephen Jordan  
<sup>†</sup>These authors contributed equally to this work.
12. *Efficient Learning of Bosonic Gaussian Unitary Channels* October 2025  
Marco Fanizza, **Vishnu Iyer**, Junseo Lee, Antonio Anna Mele, Francesco Anna Mele
11. *Fermionic Insights into MBQC: Circle Graph States are Not Universal Resources* October 2025  
Brent Harrison, **Vishnu Iyer**, Ojas Parekh, Kevin Thompson, Andrew Zhao
10. *Mildly-Interacting Fermionic Unitaries are Efficiently Learnable* QTML 2025  
**Vishnu Iyer**
9. *Tolerant Testing of Stabilizer States with Mixed State Inputs* QTML 2025  
**Vishnu Iyer**, Daniel Liang
8. *Agnostic Tomography of Stabilizer Product States* April 2024  
Sabee Grewal, **Vishnu Iyer**, William Kretschmer, Daniel Liang
7. *Pseudoentanglement Ain't Cheap* TQC 2024  
Sabee Grewal, **Vishnu Iyer**, William Kretschmer, Daniel Liang
6. *QMA with Hidden Variables and Non-Collapsing Measurements* FSTTCS 2025  
Scott Aaronson, Sabee Grewal, **Vishnu Iyer**, Simon C. Marshall, Ronak Ramachandran
5. *On the Rational Degree of Boolean Functions with Applications* October 2023  
**Vishnu Iyer**, Siddhartha Jain, Matt Kovacs-Deak, Vinayak Kumar, Luke Schaeffer, Daochen Wang, Michael Whitmeyer
4. *Efficient Learning of Quantum States Prepared With Few Non-Clifford Gates* QIP 2024  
Sabee Grewal, **Vishnu Iyer**, William Kretschmer, Daniel Liang
3. *Improved Stabilizer Estimation via Bell Difference Sampling* QIP 2024, STOC 2024  
Sabee Grewal, **Vishnu Iyer**, William Kretschmer, Daniel Liang

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<sup>1</sup>Authors listed in alphabetical order by last name for most of the listed papers, as is customary in theoretical computer science and quantum computing. All exceptions are apparent.

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| 2. <i>Low-Stabilizer-Complexity Quantum States are not Pseudorandom</i><br>Sabee Grewal, <b>Vishnu Iyer</b> , William Kretschmer, Daniel Liang<br><b>ITCS 2023 Best Student Paper Award</b> | ITCS 2023 |
| 1. <i>Junta Distance Approximation with Sub-Exponential Queries</i><br><b>Vishnu Iyer</b> , Avishay Tal, Michael Whitmeyer  | CCC 2021  |

## Awards and Honors

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Google XPRIZE for Quantum Applications Semifinalist	<i>October 2025</i>
Horizon Quantum Hackathon Winner	<i>December 2023</i>
NSF Graduate Research Fellowship	<i>March 2023</i>
ITCS Best Student Paper Award	<i>January 2023</i>
University of Texas Chair's Strategic Fellowship	<i>April 2021</i>
UC Berkeley University Medal Semifinalist	<i>February 2020</i>
UC Berkeley Outstanding GSI Award	<i>March 2019</i>

## Selected Talks

### Invited

Improved Algorithms for Learning Bosonic and Fermionic Operators AIMS Workshop on Quantum Learning Theory.	<i>October 2025</i>
Efficient Quantum Hermite Transform IBM Quantum Research Seminar.	<i>September 2025</i>
Mildly-Interacting Fermionic Unitaries are Efficiently Learnable Quantum Software Lab Research Seminar.	<i>May 2025</i>

### Contributed

Mildly-Interacting Fermionic Unitaries are Efficiently Learnable Quantum Techniques in Machine Learning 2025.	<i>November 2025</i>
Improved Stabilizer Estimation via Bell Difference Sampling Symposium on the Theory of Computing (STOC) 2024.	<i>June 2024</i>
Low-Stabilizer-Complexity Quantum States are not Pseudorandom Innovations in Theoretical Computer Science (ITCS) 2023. Best Student Paper Award.	<i>January 2023</i>
Junta Distance Approximation with Sub-Exponential Queries Conference for Computational Complexity (CCC) 2021.	<i>July 2021</i>

## Teaching

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Analysis of Boolean Functions, UT Austin	Spring 2023
Quantum Information Science, UT Austin	Spring 2022
Algorithms and CS Theory, UT Austin	Fall 2021
Algorithms and CS Theory, UC Berkeley	Spring 2020
Algorithms and CS Theory, UC Berkeley	Fall 2019
Discrete Mathematics and Probability Theory, UC Berkeley	Summer 2019
Algorithms and CS Theory, UC Berkeley	Spring 2019
Discrete Mathematics and Probability Theory, UC Berkeley	Summer 2018

## Service and Leadership

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**Conference reviewing:** QIP 2026, ITCS 2026, TQC 2025, FOCS 2025, QIP 2025, TQC 2024, STACS 2024, QIP 2024, TQC 2023, TQC 2022

**Journal reviewing:** SICOMP, PRX Quantum

**Instructor, Texas Prison Education Initiative**

*Fall 2022, Fall 2024 - present*

**President, Eta Kappa Nu, Mu Chapter**

*May 2019 - December 2019*

**Department Relations, Eta Kappa Nu, Mu Chapter**

*May 2018 - May 2019*

**Co-Founder, Undergraduate Group for Theoretical CS**

*May 2018 - May 2020*

## Skills and Technical Experience

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**Programming Languages:** Python (10+ years), Java (10+ years), C++ (10+ years), C (6 years), SQL (6 years)

**Other Software:** TensorFlow, Pytorch, IBM Qiskit, Mathematica, Matlab

**Relevant Advanced Coursework:** Machine Learning, Stochastic Processes, Optimization, Quantum Information Science (3 semesters), Complexity Theory, Advanced Algebra, Real and Complex Analysis, Quantum Mechanics (2 semesters), Electromagnetism and Optics, Distributed Computing