

Gregory Meyer

in literature: Gregory D. Kahanamoku-Meyer



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Education

- 2017–present **Physics PhD (expected 2022), University of California at Berkeley**
Lab of Dr. Norman Yao, Dept. of Physics. MA awarded Dec. 2019.
- 2016 **B.S. Physics (Intensive Track), Yale University**
Distinction in the Major; cum laude
GPA: Cumulative 3.85; Physics 3.96; Computer Science 4.00

First-Author Research Projects

Efficiently-verifiable quantum advantage from a single integer multiplication

New protocol for demonstrating quantum advantage, with efficient classical verification and lean quantum circuits. Implementation in Cirq. (Manuscript in prep.)

Forging quantum data: classically defeating an IQP-based quantum test

Broke a cryptographic test of quantum advantage that had remained open for 10 years. Implemented in Julia. arxiv.org/abs/1912.05547

dynamite

Python library with C/C++ backend for efficient MPI- and GPU-parallelized simulation of many-body quantum dynamics using matrix-free Krylov subspace methods. dynamite.readthedocs.io

GPU implementation of Dumer's algorithm

Current record holder (as of Oct. 2020) for breaking Learning Parity with Noise, a post-quantum cryptographic primitive.
<https://decodingchallenge.org/syndrome>

Programming

<i>Languages</i>	Python, Julia, C, C++, ...
<i>Parallelization</i>	MPI, OpenMP, CUDA
<i>Experience with</i>	Cython, NumPy, CUDA.jl, iTensor, Cirq, Qiskit
<i>Contributor to</i>	PETSc, Xournal++
<i>GitHub</i>	github.com/GregDMeyer

Graduate Electives

Quantum Computing (U. Vazirani)

Parallel Computing (K. Yelick, J. Demmel)

Cryptography (S. Garg)

Interactive and Probabilistically Checkable Proofs (A. Chiesa)

Awards and Fellowships

- 2018-21 **Nat'l Defense Science & Engineering Graduate Fellow (NDSEG)** *Dept. of Defense* – \$115,200 + tuition, fees, health care
- 2018 **Graduate Research Fellow (GRFP)** (declined) *National Science Foundation* – \$102,000 + institutional grant
- 2017 **Heising-Simons Fellowship in Physics** *UC Berkeley* – \$67,000
- 2016 **Howard L. Schultz Award** *Yale Physics Department* – \$1,000
- 2015 **Summer Undergraduate Research Fellow** *NIST Boulder* – \$9,100
- 2014 **Yale Science Scholars Program** *Yale University* – \$4,500
- 2013-14 **Alan S. Tetelman 1958 Fellow** *Yale University* – \$7,000