Anthony Polloreno

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Work Experience

June 2016 - Present | Software Engineer at **Rigetti Quantum Computing**

Full stack software engineer. Working on control software to calibrate and characterize the quantum computer. Also worked on Rigetti's classical quantum simulator, compiler, customer facing code to access the quantum computer, and algorithms library to develop quantum algorithms. Work primarily done in Python and Common Lisp.

June-Aug 2014 | Undergraduate Student Instructor for CS70 at **U.C. Berkeley**

Worked as an undergraduate student instructor under James Cook for the summer offering of a course in discrete mathematics and probability in the Computer Science department. Taught a discussion section of 10 students twice a week, held office hours, wrote homework and exam problems, and ran review sessions.

Jan-May 2014 | Reader for CS61A at **U.C. Berkeley**

Graded homework, tests, and projects and held office hours for the introductory Computer Science course, taught by Paul Hilfinger.

Research Experience

June 2015 - Jan 2016 | Student Intern at **Sandia National Laboratories**

Quantum Computation, Control and Error Correction

Did research with Kevin Young on quantum optimal control using gradient based methods (GRAPE) with noisy controls using Python. Currently work to publish results.

July 2013 - July 2015 | Student Assistant at **Lawrence Berkeley National Laboratory**

Beamline Optics, Reflection Zone Plates

Worked with Dmitriy Voronov to develop elliptical grating patterns called reflection zone plates which allow for more efficient beamline signal transmission in the Advanced Light Source. Used Python to generate patterns for the gratings as .cif files for use by electron beam and laser lithograpy machines.

Jan-May 2013 | Undergraduate Research Apprenticeship at **U.C. Berkeley**

Animal Flight Laboratory, Hummingbird Flight

Worked with graduate student Marc Badger to investigate how hummingbirds navigate natural vegetation. Learned about avian flight as well as animal handling, and was introduced to basic experimentation techniques, Arduino usage, and Mathematica.

Education

Aug 2012 - May 2016 | B.A., **Computer Science**, **Physics**, and **Pure Mathematics**

University of California, Berkeley GPA: 3.762

Languages and Frameworks

Languages: Python, Common Lisp, Julia, SQL, LaTeX, [Quil⟩

Frameworks: MPI, Docker, Postgres, AWS, Atlassian

Relevant Coursework

Mathematics	Real/Complex Analysis (104/185) Linear Algebra (110) Set Theory (135)	Topology (202A) Abstract Algebra (113/250A) Functional Analysis (202B)
Physics	Electricity and Magnetism (110A) Classical Mechanics (105) Thermodynamics and Statistical Physics (112)	Quantum Mechanics (137A/137B/221A) Advanced Laboratory (111A/111B)
Computer Science	Algorithms (170) Combinatorics and Discrete Probability (174) Machine Learning (189)	Computability and Complexity (172) Quantum Computing (191C/294)

(1xx: upper division, 2xx: graduate)

Talks/Posters

1. Anthony Polloreno, Nicholas Rubin, Robert Smith, and William Zeng. Random quantum circuits with varying topologies and gate sets. APS March Meeting, 2017
2. Anthony Polloreno, Nicholas Rubin, Robert Smith, and William Zeng. Random quantum circuits with varying topologies and gate sets. Southwest Quantum Information and Technology (SQuInT), 2017

Publications

1. M. Reagor, C. B. Osborn, N. Tezak, A. Staley, G. Prawiroatmodjo, M. Scheer, N. Alidoust, E. A. Sete, N. Didier, M. P. da Silva, E. Acala, J. Angeles, A. Bestwick, M. Block, B. Bloom, A. Bradley, C. Bui, S. Caldwell, L. Capelluto, R. Chilcott, J. Cordova, G. Crossman, M. Curtis, S. Deshpande, T. El Bouayadi, D. Girshovich, S. Hong, A. Hudson, P. Karalekas, K. Kuang, M. Lenihan, R. Manenti, T. Manning, J. Marshall, Y. Mohan, W. O'Brien, J. Otterbach, A. Papageorge, J. P. Paquette, M. Pelstring, A. Polloreno, V. Rawat, C. A. Ryan, R. Renzas, N. Rubin, D. Russell, M. Rust, D. Scarabelli, M. Selvanayagam, R. Sinclair, R. Smith, M. Suska, T. W. To, M. Vahidpour, N. Vodrahalli, T. Whyland, K. Yadav, W. Zeng, and C. T. Rigetti. Demonstration of universal parametric entangling gates on a multi-qubit lattice, 2017
2. S. Caldwell, N. Didier, C. A. Ryan, E. A. Sete, A. Hudson, P. Karalekas, R. Manenti, M. Reagor, M. P. da Silva, R. Sinclair, E. Acala, N. Alidoust, J. Angeles, A. Bestwick, M. Block, B. Bloom, A. Bradley, C. Bui, L. Capelluto, R. Chilcott, J. Cordova, G. Crossman, M. Curtis, S. Deshpande, T. El Bouayadi, D. Girshovich, S. Hong, K. Kuang, M. Lenihan, T. Manning, J. Marshall, Y. Mohan, W. O'Brien, C. Osborn, J. Otterbach, A. Papageorge, J. P. Paquette, M. Pelstring, A. Polloreno, G. Prawiroatmodjo, V. Rawat, R. Renzas, N. Rubin, D. Russell, M. Rust, D. Scarabelli, M. Scheer, M. Selvanayagam, R. Smith, A. Staley, M. Suska, N. Tezak, T. W. To, M. Vahidpour, N. Vodrahalli, T. Whyland, K. Yadav, W. Zeng, and C. Rigetti. Parametrically-activated entangling gates using transmon qubits, 2017