

Elina Sendonaris

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Education

Massachusetts Institute of Technology - Cambridge, MA

Candidate for Bachelor of Science degree in Physics - *June 2020*

GPA: 5.0/5.0

Relevant Courses: Quantum Mechanics I-III, Seminar on Superconducting Qubits, Experimental Physics, Theory of Computation, Statistical Physics, Nanoelectronics and Comp. Systems

The Harker School - San Jose, CA - *May 2016*; **GPA: 4.41/4.0**

Experience

MIT Quantum Information Group - Cambridge, MA

Researcher - with Dr. Aram Harrow - September 2019-Present

- Characterizing phase transition between area and volume law dynamics, with change in local dimension, in random shallow 2D quantum circuits using tensor network simulations
- Found phase transition in equivalent statistical mechanical model of the circuit using Monte Carlo simulations and finite size scaling

Psi Quantum - Palo Alto, CA

Intern - May - August 2019

- Optimized single-photon sources for a photonic quantum computer using FDTD simulations of the chip and spectrum analysis in Mathematica
- Designed and built a confocal microscope system to image scattered light using a tapered optical fiber and single-photon detector, controlled by Python script

University of Sannio and VIRGO-European Gravitational Observatory - Benevento, Italy

Researcher - with Dr. Innocenzo Pinto - January 2019

- Optimized the design of mirrors of the gravitational wave detector

MIT Biophotonics and Biomedical Optics Lab - Cambridge, MA

Researcher - with Dr. James Fujimoto - June-August 2018

- Prototyped endoscopic swallowable capsule camera and illumination to image esophagus
- Implemented interleaving of signal from camera sensor and LEDs of 2 wavelengths

Tulip - Somerville, MA

Web Development Intern - June - August 2017

- Designed and prototyped customer onboarding experience, including creating a graphical interface to allow the customer to create a real time 2D map of their factory shopfloor

Summer Science Program, New Mexico Institute of Mining and Technology - Socorro, NM

Student - June - July 2015

- Worked in a team of 3 to take observations of near-earth asteroid using a C14 telescope and wrote a Python program to determine and model the asteroid's orbital parameters

Science Internship Program, University of California, Santa Cruz

- Santa Cruz, CA

Astrophysics Intern - with Dr. Joel Primack - June-August 2014

- Analyzed size and evolution of gravitationally bound dark matter halos in the Bolshoi Simulation
- Presented results at SIP final presentation and 2015 Harker Research Symposium

Projects & Publications

Cluster States in Quantum Computation - final paper for Quantum Mechanics III/8.06 (grade: A+)

- Explained at an advanced undergraduate level how to simulate any quantum circuit using measurement-based quantum computations; reviewed papers of peers

Digital Music Analysis Using FPGA (The Music Box) - final project for Digital Systems/6.111 (grade: A)

- Designed and implemented a system, with a partner, which recognized and displayed the instrument, tempo, and key of a song using a Fast Fourier Transform, on an FPGA in Verilog

Extracurriculars

MIT Machine Intelligence Community - *Webmaster, 2019*

MIT Chapter of Delta Psi - *Executive Board Member, Treasurer 2016-2018, Literary Chair, 2019*

Skills

Computer: Python, Mathematica, Verilog, React, JavaScript, CSS, HTML, Java, LISP, C

Electrical: Logic analyzer, oscilloscope, FPGA, soldering, RF

Languages: Native speaker of English, Greek, and Lithuanian; conversant in Spanish