Paul A. Horton

Arizona State University - Software Engineering B.S. and Applied Physics B.S.

School Address	Home Address	Phone:	(520) 869-1275
6356 S Sagewood	7443 W Palm Brook Pl	Email:	pahorton@asu.edu
Mesa, AZ 85212	Tucson, AZ 85743	Website:	hortonpaul.com

Summary

Paul Horton is a Barrett Honors student pursuing dual undergraduate degrees in Software Engineering and Applied Physics at Arizona State University. He is also pursuing a masters degree in Software Engineering through a 4+1. With his degrees he intends enter a doctorate program in Computational Physics and conduct research in the fields of Astrophysics and Quantum Computing.

Education

M.S., B.S. Software Engineering, Arizona State University - Polytechnic Campus, Mesa, AZ
Ira A. Fulton Schools of Engineering
Anticipated Graduation: May 2018 (B.S), May 2019 (M.S)
Major GPA: 4.06 Dean's List: Every Semester

B.S. Applied Physics, Arizona State University - Polytechnic Campus, Mesa, AZ
College of Integrative Sciences and Arts
Anticipated Graduation: May 2018
Major GPA: 4.01 Dean's List: Every Semester

Honors College, Arizona State University - Polytechnic Campus, Mesa, AZ
Barrett, the Honors College

Highlights click for more info

- Developing a quantum key generator to study quantum cryptography for an honors thesis.
- Researching teams in short-form programming competitions to improve engineering education.
- Leading software development for a solar powered educational library to help South Pacific schools.
- Coordinating the logistics of a large-scale collegiate programming competition at ASU.

Skills in order of proficiency

Programming Languages

- Python
- Java
- C++
- LaTeX
- C
- JavaScript
- Assembly
- node.js
- Verilog
- Prolog
- HTML/CSS

Software

- Adobe CC
- Microsoft Office
- Eclipse
- MATLAB
- Amazon Web Services
- Unity
- Xilinx ISE

Relevant Coursework

Physics
- Vector Mechanics
- Statistics
- Quantum Mechanics
- Mathematical Methods

Software
- Software Systems
- Embedded Systems
- Data Structures and Algorithms
- Systems Design

Experiences

Work

Self-Employed Tutoring, Mesa, AZ — October 2016 - Present
Private Physics Tutor

Maker Research Group, ASU — January 2016 - Present
Research Assistant and Data Collector

- Undertaking in qualatative data collection of makers at maker faires through surveys and interviews in order to better understand how makers relate to engineering education.

Barrett, the Honors College, ASU — August 2015 - December 2016
Teaching Assistant and Writing Tutor for Freshman Honors Reading Course

Ethical Responsibility Among Undergraduate Engineering Students, Purdue — August 2015 - May 2016
Research Assistant and Data Collector

- Collaborated with Purdue at ASU to research engineering students and their view of ethics and their ethical considerations.

STEAM (Science Technology Engineering Art Math) Labs, ASU — August 2014 - May 2016
K-12 Engineering Education Outreacher and Tinkerer

- Worked with interdisciplinary engineering undergraduates to teach K12 students the engineering design process through creative chain-reaction machines.

Extracurricular Projects

Astronomical Instrumentation Lab, ASU — January 2017 - Present
Research Assistant and FPGA Programmer

- Programming ROACH board's firmware to study the formation of stars and it's relation to magnetic fields.
- Continuing the work of a previous student to increase the resolution of instruments for astronomical optical interferometry.

Fulton Undergraduate Research Initiate, ASU — August 2016 - Present
Mentor Guided Researcher

- Analyzing the effectiveness of teams in short-form programming competitions and how their collaboration methods can bring value to the classroom setting.

Desert Hacks, ASU — June 2016 - Present
Student Organizer

- Organize a large scale 24 hour programming competition by helping coordinate the logistics and sponsorship of the event.

Extracurricular Groups and Scholarships

Barrett Polytechnic Writing Colloquium — August 2015 - Present

Computer Science Club at ASU Polytechnic — January 2015 - Present

Broadening the Reach of Engineering Through Computer Science Scholar — August 2014 - Present

Coursework Projects

All course projets were accomplished at Arizona State University unless otherwise noted.
Projects noted with a * indicate that the project was conducted in parallel with the class in order to earn Honors credit.

SolarSPELL (Solar Powered Educational Learning Library) Fall 2016 - Present

- Redesigning the front and back end of a portable offline database of documents and videos useful for educators of developing nations in the South Pacific.

Fourier Series Programs in Python Spring 2016

Graphing Mechanical Systems using MATLAB* Fall 2015

Simulation of Parking Structure and Streets in Shibuya using Unity, ASU and Waseda Summer 2015

- Explored urban areas of Tokyo for the purpose of visualization and simulation of population and vehicular traffic.

Educational Math Adventure Game in Java* Spring 2015

Phoenix Zoo Audio Exhibit Remodel using Raspberry Pi* Fall 2014 - Spring 2015

Mathematical Analysis of Massé Shots in Billiards* Fall 2014

Personal Projects

Independent Projects

IBM Quantum Experience January 2017 - Present

- Independently teaching self quantum computing using IBM's public quantum computer.

Hackathon Projects

SDHacks, University of California San Diego August 2016

- Developed an Amazon Echo skill that acts as a recipe assistant using Node.js.

SBHacks, University of California Santa Barbara April 2016

- Used IBM's Bluemix and Node-RED to create a smart weight sensor that gave updates on household items.

Beach Hacks, California State University Long Beach April 2016

- Created a numerical solving app with image recognition using OpenCV.

HackArizona, University of Arizona January 2016

- Created a VR Engineering Education and teambuilding app using Google Cardboard.