Alexander H. Yu

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EDUCATION

University of California, Berkeley — **Expected Graduation: 2023**
Electrical Engineering Computer Science B.S. — **GPA: 3.92**

- Data Structures and Algorithms
- Designing Information Devices and Systems I, II
- Discrete Mathematics and Probability Theory
- Linear Algebra
- Introduction to Databases
- Machine Structures
- Efficient Algorithms and Intractable Programs
- Introduction to Artificial Intelligence

SKILLS

Programming and Tools: Python, Java, JavaScript, C, SQL, RISC-V, MATLAB, Lua, Perl

Hardware: Fusion 360, SOLIDWORKS, Ki Cad
Languages: English, Chinese (Mandarin), Spanish

WORK EXPERIENCE

Locl.io — **May 2019 – Jun 2019**
Software and Marketing Intern — **Portland, OR**

- Consolidated and analyzed business web traffic statistics across 40+ local businesses over varying time frames
- Implemented custom image resizing code to automate reformatting of 400+ image libraries in bulk for upload
- Experimented with Google My Business API to code scripts for management of Google business location profiles

Fresco Logic — **Jul 2017 – Aug 2017**
Hardware Validation Intern — **Portland, OR**

- Coded Perl scripts that analyzed thousands of lines of chip simulation logs to look for specific simulation errors
- Tested prototype chip designs by performing simulations and analysis using field programmable gate arrays

US Wushu Center — **Jun 2016 – Aug 2019**
Assistant Wushu Instructor — **Portland, OR**

- Independently managed and taught 10-20 student classes in 45-minute periods for four hours a day
- Worked with kids of varying ages and abilities to develop their motor skills and martial arts proficiency
- Taught both beginner students and advanced students training to compete in national levels of competition

PROJECTS

Retro Arcade Game Development — **Feb 2020 – May 2020**
Personal Project — **Berkeley, CA**

- Wrote Lua scripts to program custom versions of classic arcade games to be run using Love2d game engine
- Integrated custom designed UI into Lua scripts and integrated control hardware with game software
- Designed custom physical model of retro arcade gaming cabinet using Fusion 360 CAD software

Wire Path Optimization Algorithm — **Aug 2019 – May 2020**
UC Berkeley Formula Racing — **Berkeley, CA**

- Modelled physical 3-dimensional tube chassis layout of racecar with custom object classes in Python
- Implemented interface to convert custom spreadsheet chassis layout inputs to custom Python objects
- Converted 20+ tube car into an intuitive electronic layout used by electrical sub-team to find wire paths
- Implemented search algorithms to generate efficient, optimal paths for each individual wire on the car

FRC Team 1540 — **Sep 2016 – Apr 2019**
Co-President and Mechanical Manager — **Portland, OR**

- Designed motor and pneumatic actuated mechanisms used by team over 3 competitive seasons
- Designed custom gearboxes to achieve tasks at appropriate power output and motor efficiencies
- Modelled complex geometries in designing custom mechanisms for robot to manipulate game items

EXTRACURRICULARS

Wushu and Taijiquan (Chinese Martial Arts) — **2005 - Present**

- *2018, 2017, 2016 World Champion; 2017, 2016 Pan-American Champion*

Theta Tau (Professional Engineering Fraternity) — **2020 - Present**

- *Fall 2020 Historian*