Justin Xiao

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EDUCATION

Massachusetts Institute of Technology (MIT) Cambridge, MA
M. Eng. In Electrical Science and Engineering Jun. 2018 (Expected)
Bachelor of Science in Electrical Science and Engineering, Physics | GPA: 4.7/5.0 Jun. 2017
Relevant Coursework: Solid State Circuits; Microelectronic Devices and Circuits; Microcomputer Project Laboratory; Signals, Systems & Inference; Digital Systems Laboratory; Circuits & Electronics; Solid State Physics; Quantum Mechanics 1-3

EXPERIENCE

Apple | www.apple.com Cupertino, CA
Sensing Hardware Engineering Intern Jun. – Sep. 2017
- Simulated sensor design to extract key parameters
- Characterized sensor design metrics and validated sensor performance
- Performed analysis on sensors of competing products

Keysight Technologies | www.keysight.com Santa Clara, CA
Applications Engineering Intern Jun. – Aug. 2016
- Designed algorithms in MATLAB for automatic bias control of simple and dual-drive Mach-Zehnder Modulators for complex optical communication
- Implemented standalone application with GUI to sell packaged solution to customers, with potentially $25,000 in sales

Holosonics | www.holosonics.com Watertown, MA
Electrical Engineering Intern Jan. 2016
- Prototyped circuits to investigate various power-stage configurations for ultrasonic drive system

MIT Research Laboratory of Electronics Cambridge, MA
Undergraduate Researcher Feb. – Dec. 2015
- Improved linearity of signal attenuation by designing and building acousto-optic modulator (AOM) driver circuit to study quantum effects in ultracold atoms
- Implemented a digital micromirror device (DMD) in ultracold atom experiments for precise laser beam-shaping

European Organization for Nuclear Research (CERN) | home.cern Geneva, Switzerland
Undergraduate Researcher Jun. – Aug. 2014
- Investigated the effects of quark gluon plasma on jet substructure using C++
- Extracted jet substructure variables by creating particle clustering definitions

HONORS

6.470 MIT Web Programming Competition 1st Place and Audience Choice Award Cambridge, MA
Core Functionality Developer Jan. 2015
- Developed core functionality for Harmony, a real-time collaborative online music score editor. Implemented music score editor, virtual keyboard for note input, and MIDI playback, along with numerous other features

MakeMIT Top Ten Cambridge, MA
Electrical Engineering Lead Member Feb. 2015, 2016, 2017
- Built electronics for music making device (2015), heartbeat-controlled harmonograph (2016), and robot toy controlled by building blocks using computer vision to help kids learn to code (2017)

HackMIT Hill Holliday Award Cambridge, MA
Audio Analyst Oct. 2014
- Wrote audio processor for a virtual reality music visualizer that creates a natural scene in an Oculus Rift and responds to both lyric sentiment as well as beat patterns in order to fully immerse the viewer in the music

SKILLS

- **Electronics:** General electronics laboratory skills, printed circuit board design (CADSoft Eagle), LTSpice, analog/digital design, microcontrollers, COMSOL
- **Programming:** Python, MATLAB, C++, JavaScript, HTML, CSS, Verilog, Mathematica, 8051 assembly
- **Interests:** Building, audio technology and engineering, music production, music performance