# Justin Shao

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## Education

**University of California, Los Angeles**      Sep 2022 – expected Jun 2024
- MS in Electrical Engineering
- Coursework: Linear Programming, Convex Optimization, Neural Networks and Deep Learning, Large-Scale Data Mining, Reinforcement Learning
- Participating in research in large-scale linear programming methods
- Active member and former mentorship chair of IEEE HKN

**University of California, Los Angeles**      Sept 2018 – Jun 2022
- BS in Electrical Engineering, Minor in Mathematics, GPA: 3.97

## Experience

**Amazon | Hardware Development Engineering Intern**      Jun 2022 – Sep 2022
- Wrote scripts in Python to automate characterizing serial communication interfaces
- Developed tools that automatically measure parameters of an interface bus and generate a report

**Amazon | Hardware Development Engineering Intern**      Jun 2021 – Sept 2021
- Wrote scripts in C and Python to develop audio signal measurement and processing tools
- Implemented time and frequency domain methods to process and analyze sound signals

**UCLA Electrical and Computer Engineering Department | Teaching Assistant**      Oct 2019 – Jun 2020
- Tutored electrical and computer engineering students in the honors lower division physics courses
- Hosted weekly tutorial review sessions to help with class material and homework assignments

## Engineering Projects

**Grasp Classification System**      Jan 2022 - Mar 2022
- ECE 113DA/DB capstone project
- Implemented a classification system that can discern a grasp of a user on an object by analyzing the resonant properties of the grasped object
- Wrote code in C to create and measure vibrations through piezoelectric diaphragms
- Classified grasp by calculating frequency content of measured vibrations through grasped object

**STEM Network**      Jul 2021
- First place submission for Microsoft U.S. Azure IoT Hack for Sustainability hackathon
- Developed a WiFi-connected moisture sensor device with a C program on an ESP32 microcontroller and a resistive moisture sensor circuit

**SensorTile Gesture Detection**      Jun 2019
- Designed state machine code to detect gestures from accelerometer data of a ST SensorTile
- Used digital signal processing techniques including bandpass and anti-aliasing filters
- Recognized simple shapes through movement of the sensor on a flat surface

## Technical Skills & Abilities

**Languages**
- Proficient: Python, C++, MATLAB, C

**Technologies**
- Experienced with numpy, scikit-learn, Keras, TensorFlow
- Proficient using convex optimization packages MOSEK, CVX, and CVXPY; familiar with CVXOPT

**Other abilities:**
- Object-oriented programming, numerical computing, optimization, machine learning architectures
- Familiar with methods signal processing, probability and statistics, numerical linear algebra