Miranda Lao

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Education

Olin College of Engineering

B.S. in Engineering with Concentration in Mathematics

May 2020 | GPA: 3.84

Selected Coursework

Topics in Abstract Algebra
Discrete & Convex Geometry
User-Oriented Collaborative Design
Affordable Design & Entrepreneurship
Design for Manufacture
Mechanics of Solids and Structures
Intro to Mechanical Prototyping
Graph Theory
Elements of Analysis I
Number Theory
Machine Learning
Thermodynamics
Quantum Physics
Products and Markets

Experience

Southern University of Science and Technology

Da Vinci Challenge Camp Program Instructor

Shenzhen, China | Jun 2019 - Aug 2019

Provided guidance to mulitple first-year undergraduate student teams through a first-iteration project-based engineering camp. Worked with program coordinators and other instructors to design and troubleshoot curriculum for the camp. Gave presentations to students on various topics, such as Design Thinking and Rapid Prototyping. Provided translation (Mandarin / English) between international instructors, Chinese national instructors, and students.

Aberdeen Test Center

Mechanical Design Engineering Intern

Aberdeen Proving Grounds, MD | Jun 2018 - Aug 2018

Provided assistance to engineers in the Engineering Design and Development Branch by performing calculations, making and reviewing CAD drawings, and performing test-site jobs. Worked with another intern on various CAD designs, project assembly, and machining tasks. Participated in design reviews and attended program briefings. Obtained Secret level security clearance.

Selected Projects

Early Hearing Health Screening

Needham, MA | Sep 2019 - Present

Senior Engineering capstone project done through the Affordable Design and Entrepreneurship program, part of an eight person team. Launched a new project focused on making early hearing health screening more accessible in majority world contexts. Laid a foundation for a multi-year project by forming connections with existing organizations, researching existing otoacoustic emissions technology, and finding a suitable location to partner with for eventual deployment.

Robot Hand

Needham, MA | Oct 2019 - Dec 2019

Final project for the Design for Manufacture course, part of a five person team. Redesigned a robot hand to be more cost-effective, easier to manufacture and assemble, and to be compatible with a UR5 robot arm. Reduced original bill of materials cost from ~$1600 to $418. Actualized our design through fabrication and presented a working demo.

SoundCrystal Music Player

Needham, MA | Sep 2017 - Dec 2017

Semester project for the Principles of Engineering course, part of a five person team. Designed and fabricated an original, fully-integrated music player with a marble-run activation and LEDs that pulsed with music played from the system. A music library was stored on a Raspberry Pi, making the system fully independent.

3D-Printable Origami Glider

Needham, MA | Jun 2017 - Aug 2017

A 10-week summer research project under Professor Chris Lee at Olin College of Engineering, part of a five person team. Examined the applicability of origami flat-folding patterns to create self-deploying fixed-wing aircraft, and viability of 3D-printing techniques to fabricate thesm. Went through several design iterations, ending with a working final prototype that self-deployed and glided to the ground from an initial drop.

Skills

Mechanical Design
DFM/DFA Analysis
FEA
CAD
(Solidworks, Fusion 360)
CAM
(Fusion 360)

Prototyping
3D-Printing
Laser Cutting
Arduino
Milling and Turning

Visuals
Adobe Photoshop
Adobe Illustrator
Adobe InDesign

Software
Python
Java
MATLAB
Git
Processing

Documentation
Microsoft Office Suite
LaTeX
HTML / CSS

Interests
Mandarin (fluent)
Drawing / Illustration
Reading
Hiking
Learning new things