

ANNETTE GUO

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EDUCATION

Carnegie Mellon University

M.S. Mechanical Engineering, c/o 2021
B.S. Mechanical Engineering, c/o 2020
Dean's List: Fall 2018, Fall 2019
QPA: 3.87 [M.S.] | 3.60 [B.S.]

AWARDS

2020 | Graduated with University Honors
2019 | Best Overall ME Capstone Project
2019 | Formula SAE North 1st Place
2018 | Formula SAE Electric 1st Place
2018 | SURF Grant Recipient
2017 | Boeing National Merit Scholarship

SKILLS

Fabrication

Laser Cutter, Composites Manufacturing,
3D Printer, Manual Mill, Lathe, Band Saw,
Drill Press, CNC Router, Woodworking

Software

Fusion 360, Solidworks,
MATLAB, Excel, CorelDraw

Programming

Python, C++, ROS, Rviz, VBA

Relevant Coursework

Human Experience in Design
Design for Climate Change
Making Your Product at Scale
Grand Challenge Innovation
MechE Project Management

Interests

Formula SAE, Rock Climbing,
Sustainability, Reading, Jigsaw Puzzles,
Ultimate Frisbee, NYT Crosswords,

EXPERIENCE

inventXYZ - Product Design Curriculum Developer

June 2021 - Present | Kansas City, Missouri

Designing and teaching a Product Design course for 30 inner-city Kansas City high schoolers to learn Computer Aided Design, laser cutting, and 3D printing and earn course credit. Creating project-based curriculum and bite-size tutorial videos from scratch to equip students with an engineering-minded lens and to help students gain confidence in their skills and work ethic.

Carnegie Mellon Racing - Aerodynamics Wing Element Lead

August 2017 - August 2020 | Pittsburgh, PA

Led design and manufacturing with the goal of mass optimization, producing a lightweight system with a 50% reduction in mass and 200% increase in the number of airfoils. Improved robustness of structural analysis using FEA and iterative topology optimization, and established systems to improve layout quality for maintenance of CFD-predicted 240% increase in downforce.

Design I @ CMU - Teaching Assistant

August 2019 - May 2021 | Pittsburgh, PA

Guided 250+ third-year engineering students through their first design-based course, providing feedback to students on their work and helping them consider the structural integrity of their assemblies. Designed new projects for remote students to achieve the same learning objective as their in-person peers.

PROJECTS

50% Carbon Reduction by 2030: Layers of Change

Spring 2020 | Design for Climate Change Case Studies

Developed ~50 page report and series of four presentations that studied how a 50% carbon reduction could be achieved as an individual, organization, or institution. Conducted user research to establish reasonable scope and prototyped what such a future would look like.

SIX: An Easier Way to Communicate with Braille

Fall 2019 | Design II Capstone Project

Created modern Braille typewriter that uses electronics to facilitate interactions between students and teachers in order to increase employability of students with visual impairment. Designed the linear translation system that achieved 2.5mm step size for embossing, and integrated 5 subsystems into one device.

Backpack Co-bot: A Different Kind of "Helping Hand"

Summer 2019 | CMU Biorobotics Lab

Redesigned electrical integration system for a daily living assistance robot, employing a modular design to allow researchers easy access to hardware components and ensuring structural security of upgraded elements.