Drew Deffenbaugh

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Education

University of Pittsburgh *2020 – 2024*

- Swanson School of Engineering, Bachelor of Mechanical Engineering
- Summa Cum Laude (3.76)
- SSOE Dean's Honor and Term Honor Lists *2021; 2022; 2023; 2024*
- Relevant Coursework:
    - Mechatronics, Mechanical Vibrations, Automatic Controls, Engineering Simulation in Design

Work Experience

Robotics Engineering Co-Op *Aug – Dec '22; May – Aug '23*

Sherwin Williams

- Worked closely with a team of 12 engineers developing advanced automation control systems.
- Established network communication between hundreds of devices including photo eyes, VFDs, point clouds, conveyor controllers, KUKA Robots, and more.
- Aided in RFQ, Install, Startup, IO-check, and FAT for multimillion-dollar order picking robotic systems.
- Modified KUKA Robot and PLC manufacturing system on site. Facilitated training plant personnel to operate and troubleshoot the system.

Pitt Makerspace *Jan '22 – Current*

Program Committee

- Plan, run, and execute weekly public events developing skills in design, entrepreneurship, and fabrication.
- Advanced Soldering Techniques, Keyboard from Scratch, Industry Speaker Series, Molding and Casting

Mentor

- Train and guide hundreds of students on utilization of equipment (3D Printer, Laser Cutter, CNC, etc.).
- Mentored and inspired makers of all levels in an engineering-focused makerspace, fostering skill development, collaboration, and innovation.

Undergraduate Teaching Assistant - *Statics and Mechanics of Materials* *Aug '23 – Dec '23*

Undergraduate Research Assistant - *Human Movement and Balance Laboratory* *Jan '23 – Apr '23*

Project Experience

Mechatronic Can Crusher and Recycling Sorter *Jan '24 – Apr '24*

- Designed, manufactured, and integrated mechanical and electrical subsystems culminating in a final demo.
- Utilized ATmega328P, machine design, and rapid prototyping (laser, CNC, 3D printing).

Binder Jet 3D Printer Educational Curriculum *Aug '23 – Dec '23*

- Worked as a team of 6 on the development of a binder jet 3D printer and educational materials targeted as a tool for educators working with high school students.
- Created a demo printer, build videos, process documentation, and began work on a fully functional printer.

Quantifying Flavor Perception in Oranges: A Procedure for Evaluating Yumminess *Aug '23 – Dec '23*

- Developed a robust method and prototyped a mathematical model to predict orange yumminess.
- Selected sensors, evaluated test uncertainty, utilized Arduino and physical sensors, documented testing procedure, processed measured data, and completed project report and presentation.

Custom Split-flap Display *Current*

Edge-lit LED Frosted Acrylic Infinity Mirror *2023*

Skills

- 3D Printing, Laser Cutting/Engraving, CNC Router/Plasma Cutter, Soldering, PCB Design/Manufacture
- SolidWorks, Fusion 360, ANSYS, Rhino (Grasshopper), AutoCAD, Rockwell PLC, KUKA Robots, WorkVisual, MATLAB, C, Python, Office 365, LaTeX, Leadership, Teamwork, Communication