Theo Usher

tsu2107@columbia.edu • LinkedIn • Portfolio

EDUCATION

Columbia University, The Fu Foundation School of Engineering and Applied Science **New York, NY**
Bachelor of Science, Mechanical Engineering May 2024
Cumulative GPA: 4.03/4.0
Tau Beta Pi Engineering Honor Society
Relevant Courses: Intro to Electrical Engineering, Robotics Studio, Human-Centered Design and Innovation

WORK EXPERIENCE

Airobotics Drones, *Design Engineering Intern* Tel Aviv, Israel; May 2023 – Jul 2023
- Designed, prototyped, and constructed ground station for an autonomous counter-drone UAV
- Collaborated on a team to analyze, test, and optimize counter-drone's net launcher
- Researched and designed systems to optimize manufacturing of counter-drone

Terabase Energy, *Mechanical Engineering Intern* Davis, CA; May 2022 – Aug 2022
- Designed and assembled a mobile, easy access solar panel storage rack for field deployment of fragile panels
- Collaborated with team on a vehicle for solar panel transportation and installation in utility-scale projects

Columbia Bartending Agency, *Freelance Bartender* New York, NY; Dec 2022 – Present

LEADERSHIP & COMMUNITY INVOLVEMENT

Columbia Space Initiative, *Rockets Mission Lead & CubeSat Mission Member* Sep 2020 – Present
- Lead a 50-person team to research, design, and build a hybrid rocket to reach 30,000 ft with payload
- Organize meetings, goals, and project timelines to ensure the Rockets Mission is both successful and fun
- Lead design and integration meetings, fostering collaboration and creative ideas
- Communicate with sponsors and alumni to leverage their support and expertise
- Design and construct a mechanism for the ejection of the rocket nose cone and dual parachute deployment
- CubeSat: collaborate on a team to design and build a cubesat to be launched by NASA's CubeSat Launch Initiative

Engineers Without Borders – Columbia University Chapter, *Treasurer & Piping Lead* Sep 2020 – Jun 2023
- Work on a team to research, design, and plan the construction of a water distribution system in rural Morocco
- Streamlined accounting system for the $25,000 budget and recovered $8,000 of missing money
- Lead team designing and planning implementation of 4 km of piping and water access points

ENGINEERING DESIGN PROJECTS

AGI – Product Design Jan 2023 – May 2023
- Collaborated with a group to design an AI grader to reduce teacher workload
- Interviewed potential customers and stakeholders
- Utilized ChatGPT and other AI tools to help connect our ideas and solve design issues

Introduction to Machining Project Sep 2022 – Dec 2022
- Manufactured a mechanical jack using a mill, lathe, laser cutter, and CAMWorks Software

Bipedal Walking Robot Jan 2022 – May 2022
- Designed bipedal walking robot using Solidworks and sketching
- Manufactured robot with 3D printing, screw inserts, and soldering
- Programmed and tested robot's bipedal walking using Raspberry Pi

SKILLS

Technical Skills: Computer Aided Design (Solidworks), Matlab, Ansys, Excel, Python, C++ , Computer Aided Manufacturing, Circuit Design (Eagle), Robotics, Iterative Design, Finite Element Analysis, PowerPoint
Non-Technical Skills: Leadership, Human-Centered Design, Collaboration, Organization
Citizenship: Dual USA & Canada