Samuel K Hibbard

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Experience

Formlabs | Mechanical Engineering Intern — Somerville, MA | **2023-2023**
- Owned and designed several subsystems in a prototype 3D printing auxiliary equipment
- Developed several injection molded and SLS cosmetic and functional parts for a flagship product
- Integrated and designed jigs and rigs for lifetime testing, in process inspection, and manufacturing
- Developed knowledge of large scale manufacturing, PLM use,

Alloy Enterprises | Mechanical Engineering Co-op — Somerville, MA | **2022-2023**
- Designed, integrated, and tested automated laser-cutter bed cleaning system for industrial application
- Designed laser-safe enclosure, feedstock entry, access doors, and camera mounts for industrial machine
- Built and designed multiple electrical cabinets for industrial automation and power distribution
- Fabricated parts with proprietary aluminum laminate foil additive manufacturing system

Institute of Experiential Robotics | Undergraduate Researcher — Boston, MA | **2021-Present**
- Constructed a 6DOF end-effector to enable the hyperspectral mapping of extraterrestrial rocks
- Independently researched and built novel bioinspired compliant mechanisms for robotics applications
- Presented "Novel Conical Compliant Rolling Contact Mechanism for Robotic Wrists" at NERC 2022
- Conceptualized voxel-based omnidirectional table for collaborative work in fish processing industry
- Created renders, graphics and models for funding proposals, and designed the lab logo and branding

Fulfil Solutions | Mechanical R&D Design Co-op — Redwood City, CA | **2021-2021**
- Owned and designed two electromechanical axes of a novel inventory management system
- Primary engineer for custom charging station for mobile robots, conceptualization to manufacturing
- Designed a mobile robot upgrade to improve core sensorization, guided assembly and integration
- Created industrial electrical documentation and helped design cabinets and harnesses for outsourcing

PARIS – DoE E-Robot Challenge | Design Lead — Boston, MA | **2021-2022**
- Helped conceptualize a flipper-treaded mobile robot to remotely seal aging homes with spray foam
- Won the $200,000 DoE E-robot phase 1 prize to build and commercialize the concept
- Designed chassis and drivetrain systems, including a fully custom gearbox and lightweight frame/shell

NASA's Mars Ice Challenge | Team Lead — Boston, MA | **2019-2021**
- Won 2021 Best Technical Paper and Second Place overall, awarded $24,000 in grants by NASA
- Spearheaded melting and extraction system, designed parts for machining, 3D printing, sheet metal
- Managed 20 student-engineers, providing guidance on practical engineering and hands-on skills
- Wrote professional deliverables for NASA, including funding proposals, technical papers, and videos
- Won Northeastern's Prestigious RISE Innovation Award for PARSEC: An In-Situ Ice Extraction Robot for Mars

Sunrise Labs | Engineering Intern — Bedford, NH | **2018-2019**
- Developed test protocols for medical product and app, designed IEC 60601-1-8 compliant alarms

Education

Northeastern University | College of Engineering — Boston, MA | **2019-Present**
Candidate for a Bachelor of Science in Mechanical Engineering — GPA 3.85/4.00
- **Activities**: Pi Tau Theta Honor Society, SEDS (Space Engineering Club), ASME, Intro to Robotics Teacher
- **Awards:** RISE Innovation Award for Student Research, 1st place student paper at ASEE Northeast conference for Oscillus wave energy generation prototype, Dean's Scholarship, Dean's List every semester
- **Publications:** Hyper-Drive: Visible-Short Wave Infrared Hyperspectral Imaging Datasets for Robots in Unstructured Environments. arXiv preprint arXiv:2308.08058.

Bedford High School | International Baccalaureate Diploma — Bedford, NH | **2015-2019**

Skills & Interests

Engineering Software: Solidworks (CSWA), FEA, Fusion 360, AutoCAD, Blender, MATLAB, Arduino
Engineering Skills: DFA, DFM (3DP, Machining, Sheet Metal), Basic GD&T, 3D Printing, Electrical Panel Design, Materials Science, Wiring, Soldering, Crimping, Assembly, Rapid Prototyping, Testing
Other: Technical Writing, Logic Pro X, Adobe Illustrator, Project Management
Interests: Compliant Mechanisms, Camping, Music Production, Philosophy, Graphic Design, 3D Printing