Georgia Burr Crowther

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About Me

I am a hardware-focused robotics engineer passionate about sustainability, equity, and the potential of new technologies on and off planet Earth. I love to work across disciplines and bring projects with a tangible impact from concept to reality.

Education

Master of Science in Robotic Systems Development (MRSD)
Carnegie Mellon University – Robotics Institute, Pittsburgh, PA – GPA 4.00 – May 2019

B.S.E. in Mechanical Engineering
Cornell University – College of Engineering, Ithaca, NY– GPA 3.53 – May 2014
2013 Kessler Fellow

Professional Experience

Lead Robotics Engineer **Feb 2022 – Apr 2023**
Denizen, Inc

- Built, programmed, and managed an industrial robot arm and all peripheral hardware for an automated large format additive manufacturing (LFAM) cell
- Designed and manufactured 3D printed dwellings including a fully functional remote work "pod" and full composting bathroom unit
- Wrote and maintained build, operation, and debugging documentation and code base for LFAM cell

Robotics Hardware Engineer **May 2019 – Jan 2022**
ProtoInnovations, LLC

- Designed, built, and field-tested experimental rover wheels for NASA SBIR program in collaboration with NASA centers
- Developed innovative mechanisms and technologies for sensing wheel performance and actively adjusting wheel properties using shape memory materials
- Performed wheel testing and validation using custom hardware designed in-house for NASA centers

Mechanical Engineer **Summer & Winter 2013, May 2014 – Feb 2017**
Social Bicycles/JUMP Bikes

- Designed and implemented mechanical and electrical systems for large-scale production
- Coordinated manufacturers, assembly houses, component supply chains, and customers to deploy outdoor POS kiosks and other bike infrastructure in over a dozen cities
- Prototyped secure and robust mechatronic locking and charging mechanisms for electric-assist transit products with a focus on DFM and modularity
- Collaborated with operators and interacted with users to improve products and customer experience

Projects and Research

The Reclamation Factory – Ascender Incubation Program **May 2023 – Present**
Founder and Robotics Engineer

- Building a scaled automated plastic recycling and manufacturing pipeline, including a pellet extrusion 3D Printer for post-consumer source materials
- Performing customer interviews, applying for grants, and managing business financials
- Designing new and beautiful reclaimed plastic products in partnership a local artist

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Projects and Research Cont.

Magnify Biosciences – Medical Sample Processing Platform **June 2023**
Consultant
- Designing and building an automated robotic platform prototype for lab sample processing
- Using systems engineering tools and frameworks for managing and documenting project progress

Carnegie Mellon University – Tensegrital Wheel for Enhanced Surface Mobility **2018 – 2019**
Robotics Researcher, Advisor: Dimitrios Apostolopoulos
- Exploring unique wheel geometries that mimic the properties of variable pressure pneumatics through tensegrital design and minimal actuation for planetary exploration
- Researching analytical methods for devising and controlling actuated, stable tensegrity

InMotion Systems – Remote Control Car Prototype **Feb – May 2019**
Mechatronic Consultant
- Invented an add-on steering device for converting a conventional car to a remotely controlled vehicle
- Designed, constructed, and tested hardware on multiple car models

Carnegie Mellon University – Multi-Modal Landmine Detection **Sep 2017 – May 2018**
Robotics Researcher, Advisors: Dimitrios Apostolopoulos, John Dolan
- Developed and tested low-cost, automated platform for detecting and classifying buried landmines
- Designed and built actuation hardware and power distribution electronics for multi-modal sensing system

Cornell University – Cornell Mars Rover Project Team **Sep 2011 – Jun 2014**
Team Lead, Systems Engineer, Advisor: Ephrahim Garcia
- Led interdisciplinary team of 40 students to compete in the University Rover Challenge
- Designed and manufactured robotic arm, claw, and chassis components
- Acted as team system engineer, coordinating efforts from hardware, software, and business sub-teams

Publications

- Crowther, G., Apostolopoulos, D., & Heys, S. (2022). Tensegrital wheel for enhanced planetary surface mobility: Part 1 – design and evolution. - https://doi.org/10.1016/j.jterra.2021.11.008
- Crowther, G., Apostolopoulos, D., & Heys, S. (2022). Tensegrital wheel for enhanced planetary surface mobility: Part 2 - performance assessment of a ruggedized, double-layer tensegrital wheel. *Journal of Terramechanics*, *100*, 87–101. https://doi.org/10.1016/j.jterra.2021.11.007

Skills

Hardware Design Tools: Fusion360 · SolidWorks · Rhino/Grasshopper · ANSYS · EAGLE
Manufacturing: Rapid Prototyping · MIG/TIG Welding · Manual/CNC Mill and Lathe · Blacksmithing
Programming: Python · MATLAB · RAPID · C · HTML/CSS · PLC, RPi, Arduino Experience
Other: Project Management · Hardware Documentation · Leadership

Extracurricular

Board Member at Prototype PGH · Member of Ascender's 23-24 Incubator Cohort · Women's Health Center Volunteer · CMU Admissions Committee Member

Interests & Hobbies Metal Working · Sketch Comedy · Cycling and Bike Repair · Gardening