

# 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 on projects with a tangible impact.

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## 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*

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## Professional Experience

### Lead Robotics Engineer

**Feb 2022 – Apr 2023**

[\*Denizen, Inc\*](#)

- Built, programmed, and managed industrial robot arm and peripheral hardware for large format advanced manufacturing (LFAM)
- Designed and printed 3D printed dwellings including fully-functional remote work “pod” and full bathroom unit
- Wrote RAPID code generator to convert G-code instructions for ABB robot arm

### 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

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## Projects and Research

[\*\*The Reclamation Factory\*\*](#) – Ascender Incubation Program

**May 2023**

*Founder*

- Accepted into the Ascender 23-24 Incubation Cohort
- Combining my passions for robotics, sustainability, and industrial design to create beautiful and durable functional objects from recycled plastic

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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: Ephraim 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

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## 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>

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## Skills

**Hardware Design Tools:** Fusion360 · SolidWorks · Rhino/Grasshopper · ANSYS · EAGLE

**Manufacturing:** Rapid Prototyping · Manual/CNC Mill and Lathe · MIG/ TIG Welding · Woodworking

**Programming:** Python · MATLAB · RAPID · C · C++ · HTML/CSS

**Other:** Project Management · Leadership

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## Extracurricular

**Board Member at [Prototype PGH](#) · Member of Ascender's [23-24 Incubator](#) Cohort · Women's Health Volunteer**

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**Interests & Hobbies**   Sketch Comedy · Cycling and Bike Repair · Gardening