

Ryan Formica

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Hands-on engineer with background fabricating electro-mechanical products for use in real-world applications. Experience in the entire product development process, from ideation to prototype to small scale manufacturing.

WORK EXPERIENCE

Formica Protofab, LLC, Butler, PA
Prototyping Engineer

May 2023-present

- Supported the development of 5 client custom engineering and manufacturing projects, including production prototypes
 - Served as project lead, designed, and built a custom myoelectric arm prosthetic, including initial testing, data analysis, circuit design, and microcontroller coding.
 - Helped develop, optimize, and test device to track airfield assets, including deicing trucks. Performed field installation and testing with devices. Performed thorough analysis on data collected by device and generated field reports.
 - Worked on sewer pipe inspection robot modernization project. Designed and fabricated custom parts and complex circuits. Performed thorough product testing through multiple rounds of prototyping.
 - Worked on track lighting system project, including custom PCB design using KiCAD and fabrication of custom parts using various techniques like 3D printing and laser cutting. Performed design for manufacturing and iterative prototyping techniques to refine product design. Built over 200 units.
 - Developed automatic golf ball cleaner, including custom circuit design and product and component testing, verification and validation.

National Dentex Labs, Irwin, PA
Engineering Co-Op

May 2025-August 2025

- Developed new technologies to increase product quality and production efficiency to be used in 50+ dental labs nationwide
- Performed research and development work focused on automated quality control systems and AI-powered computer vision models
- Developed electro-mechanical prototypes using various techniques including 3d printing, CAM milling, and custom PCB fabrication

University of Pittsburgh Alcohol and Smoking Research Lab, Pittsburgh, PA
Research Assistant

August 2023-December 2024

- Conducted research in a neuroimaging study using functional and structural MRI under Dr. Michael Sayette
- Processed over 100 anatomical MRI scans, finishing processing portion of the research project 4 months ahead of schedule
- Developed strong proficiency in AFNI software and MRI skullstripping

EDUCATION

University of Pittsburgh, Pittsburgh, PA

MS in Bioengineering – Medical Product Engineering

Expected April 2026

BS in Neuroscience, Minor in Chemistry, Certificate in Conceptual Foundations of Medicine
Summa Cum Laude, Frederick Honors College member, recipient of Honors Joint Degree

December 2024

ACCOLADES AND ACHIEVEMENTS

- Recipient of the University of Pittsburgh Graduate Engineering Education Scholarship, member of associated fellowship program
- Dietrich School of Arts and Sciences Dean's List recipient each undergraduate semester
- Member of the University of Pittsburgh OCC Honors Society (induced 2024)
- University of Pittsburgh Big Idea innovation competition semifinalist
- Credited with authorship for full, annotated genome of genus *Gordonia* bacteriophage Chariannelly published to GenBank; genetic sequence including functions and identity of the corresponding proteins published

SKILLS

- **Software/Programming:** MATLAB, CAD (especially Autodesk Fusion and Rhino 3D), XML, SQL, Blender 3D, Python, HTML
- **Technical:** Design verification and validation, product testing, prototyping, manufacturing, design optimization, product design, user-centered design, design for manufacturing, lean manufacturing, robotics, custom PCB design, circuit board fabrication, product assembly, 3d printing, laser cutting, laboratory and research skills, presentation skills