Robert Brown

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Education

Cornell University (Expected May 2027) GPA: 3.97

B.S. in Mechanical Engineering

Relevant Coursework: Differential Equations, Statics and Mechanics of Solids, Newtonian Dynamics, Physics III: Waves, Thermodynamics

Experience

Eisco Scientific; Engineering Intern May 2025 – Aug. 2025

- Led product development for a Maglev Science Kit (current being manufactured overseas).
- Reduced manufacturing cost by 38% while maintaining design functionality, designed and tested 6 prototype variations to optimize performance, and made high quality engineering drawings for manufacturing.
- Executed setup of a new woodworking shop, including assembly and integration of $50k worth of tooling.
- Engineered carbon fiber splitter for Porsche 987, fabricated using composite manufacturing methods.

Cornell Mars Rover Engineering Project Team; Arm Subteam Member Jan. 2024 - Present

- Yearly cycle of designing, manufacturing, and testing a rover which competes in the University Rover Challenge.
- Designed and fabricated cycloidal gearboxes, achieving 73% efficiency and 34 arcmin backlash
- Integrated electronic and mechanical components into our custom 6 DOF robotic arm
- Manually machined parts on Mill/Lathe, 3D printed prototypes, optimized designs using Ansys FEA

CME Associates Material Testing Intern May 2024 – Aug. 2024

- Tested material properties of concrete, soil, and asphalt at construction sites to ensure accordance with engineering specifications in order to clear crews to proceed or mandate additional measures be taken.
- Drafted reports, shadowed inspectors, and obtained APNGA- Nuclear Gauge and ACI Grade I certifications.

Research Assistant, University of Rochester Hajim School of Engineering May 2020 - Aug. 2022

- Synthesized and tested mechanical properties of hydrogels used in an in-vitro disease model under Prof. Benoit
- Analyzed collagen images to determine fiber angle variability as part of a metastasis project under Prof. Brown

Ling K, Srivatsava A, Deans A, **Brown RM**, et al. (2023) "Developing Perfusable Vasculature for an Outer Retinal Blood Barrier-on-a-Chip" Microphysiological Systems World Summit, Berlin

Desa DE, Wu W, **Brown RM**, Brown EB IV, Hill RL, Turner BM, Brown EB III (2022) "Second-Harmonic Generation Imaging Reveals Changes in Breast Tumor Collagen Induced by Neoadjuvant Chemotherapy" Cancers. Feb 9; 14(4):857.

Extracurriculars

Calculus II/III Workshop Facilitator Sept. 2024 – Present

- Collaborate with co-facilitator to lead weekly 20+ person workshops and create stimulating problem sets.

Big Red Pep Band Sept. 2024 - Present

Cornell Chess Club Sept. 2023 - Present

Honors

Monroe Professional Engineers Society Alstom Signaling Inc. Scholarship 2023 - 2027

Polish Heritage Society of Rochester Scholarship 2023 - 2027

HFL Rebecca Sue Bean Scholarship 2023 - 2027

Skills and Interests

CAD/Design: Fusion 360, Inventor, SolidWorks, GD&T, Technical Drawings

Hands on: Machining (Mill/Lathe), Composites, 3D Printing, Part Integration

Interests: Chess (~8k games played), Golf, Skiing, Music, Car Spotting

Software: Ansys FEA, Matlab, Python

General: Microsoft Suite