

Drew Boughton

563 Chandler St. | Chelsea, MI 48118 | (734) 926-7663
drbought@umich.edu | www.linkedin.com/in/drew-boughton

Education

University of Michigan

Bachelor of Science in Engineering in Mechanical Engineering, Minor in Electrical Engineering

Ann Arbor, MI
December 2023

- **GPA:** 3.672/4.000
- **Honors:** Five terms College of Engineering Dean's List, four terms University Honors, James B. Angell Scholar
- **Relevant Coursework:** Embedded Control Systems, Control Systems Analysis and Design, Modeling and Control of Dynamic Systems, Signals and Systems, Design and Manufacturing I, II, & III, Design for Manufacturability

Research Experience

University of Michigan Space Physics Research Laboratory (SPRL)

Research Assistant

Ann Arbor, MI
March 2023–Present

- Member of B-SPICE mission, a collaboration between SPRL, NASA, Colorado State University, and Los Alamos National Lab. Will study plasma ejection as a method for mitigating spacecraft free-charging and improving electron beam studies.
- Finalized structural design and connectivity for all SPRL deliverables, including three large multi-level sensor modules, a Langmuir probe, an electron gun, and rocket-mounted current sensors.
- Produced over 100 pages of reviewed engineering drawings for manufacturing of components and sensor housings.
- Designed and fabricated vibration testing plate and rolling 3ft assembly apparatus for integrated-system vacuum testing.

Active Solar Tracking for 3-D Photovoltaic Modules Project

Project Lead

Ann Arbor, MI
June 2023–Present

- Wrote Particle IoT software that uses NREL solar position algorithm to control previously-made dual-axis prototype.

ME 450: Design and Manufacturing III Student

Jan.–April 2023

- Studied novel vertical single and dual-axis tracking solar panel arrays patented by project sponsor, a UM research scientist.
- Simulated discrete-state active solar tracking in Ansys Speos to study improvements in panel irradiance due to tracking.

Project Team Experience

University of Michigan Autonomous Robotic Vehicle Team

Platform Team Lead

Ann Arbor, MI
June 2023–Present

- Led bi-weekly summer design meetings to develop new vehicle design, including new suspension and cooling systems.
- Created new member onboarding materials, including Solidworks and advanced fabrication education and tasks.

Platform Team Assistant Lead

Sept. 2022–May 2023

- Designed and fabricated new gearbox casing to adapt dual-motor driving gearbox to be single-motor, improving control.
- Managed team manufacturing of structural components and assembly of entire 2ft by 3ft by 3ft vehicle. Vehicle placed third in design out of 29 other global universities at the annual Intelligent Ground Vehicle Competition at Oakland University.

Michigan Data Science Team

Image Super Resolution Project

Ann Arbor, MI
Sept.–Dec. 2022

- Implemented image upscaling generator and predictive image discriminator to quadruple-resolve low-resolution images.
- Trained generator using VGG-19 convolutional neural network and reduced generator loss by 70% after seven iterations.

Activities

Tau Beta Pi Engineering Honors Society (TBP), University of Michigan Chapter

Service Coordinator

Ann Arbor, MI
Jan. 2023–Present

- Member of officer corps, the leadership of the chapter. Nominated by multiple officers and advisors and elected by peers.
- Organized TBP's participation in over a dozen service events for the College of Engineering and Ann Arbor area in W23'.

Fall SWE/TBP Career Fair Chair, Registrations Team

May–Sept. 2022, May 2023–Present

- Team responsible for company outreach, sponsor level advertisement, and table placement of all companies for the fair.
- Wrote automation macros that used recruitment and past career fair data to optimize company table placement.

Active Member

Sept. 2021–Present

- Maintained Prestigious Active status from F22' to present through leadership and over 30 hours of service each semester.
- Served as an electee team lead in W22' and F22'. Voluntary advising role for a group of 8-10 students as they elect to TBP.
- Recognized in F21' as "Most Outstanding Electee" among 60 undergraduate electees by completing over 30 service hours. Electees invited by TBP are engineering students of Junior-standing that are in the top eighth of their graduating class.

Skills

- Software: SolidWorks, Simulink, Stateflow, TensorFlow, Ansys Speos
- Languages: MATLAB, Python, C, C++, JavaScript
- Fabrication: Mill, Lathe, Waterjet, 3D Printing