

# Brian Hou

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## Education

Purdue University Junior

Jan 2024 - projected May 2027

Robotics Engineering Technology BS, concentration in Intelligent Manufacturing

GPA: 3.5

## Summary

Purdue Robotics Engineering Technology junior with experience designing, building, and validating robotic and electromechanical systems. Strong background in CAD, controls, and prototyping, with industry co-op experience and leadership roles on award-winning robotics teams.

## Work Experiences

**GE Appliances** 2024 Fall Semester Co-op

Aug 2024 - Dec 2024

*Mechanical Design Engineer/ Software Developer*

- Developed CAN bus control logic for RVAC systems, reducing system failure points by 99%
- Analyzed field test data using Thermalouples and Agilent DAQ, accelerating NPI launch by 4+ fiscal weeks
- Streamlined validation testing using NI labVIEW and OmniScope, improving data analysis efficiency by 75%
- Developed a cost-effective airflow test chamber using Solidworks CFD, generating \$30K+ in cost savings
- Collaborated cross-functionally with Haier (China), leveraging bilingual skills to ensure technical alignment and on-time execution

## Project Experiences

**Boiler Robotics**

July 2025 - Present

*Robotic Arm Mechanical Team Co-Lead*

- Mechanical co-lead a team of 5 for a University Rover Challenge global top-50 team
- Overseeing 5 DoF fully articulative arm and end effector sub systems
- Created a 5-axis robotic arm and multi-function end effector using Fusion 360 and Solidworks
- Developed an end effector capable of 7+ kg payload handling while maintaining fine manipulation

**Purdue ACM SIGBot**

May 2023 - June 2024

*Robotic System Designer*

- Contributed to a 2024 World Championship team, earning Design and Community Awards
- Designed and detailed competition-ready robot assemblies using Autodesk Inventor and Solidworks
- End-to-end robot design and build, from concept through fabrication and integration

**PYRO Robotics**

May 2022 - April 2024

*Project Lead & Mechanical Lead*

- Design Lead and Team Lead of construction for award-winning competitive robots
- Created complex mechanical systems and mechanisms using Solidworks
- Reduced troubleshooting downtime by 30% through cross-functional collaboration and design iteration

## Personal Projects

- Designed and built a 3-DOF fully articulated robotic arm with integrated kinematics and servo control for precise 3D motion; modeled in SolidWorks and 100% 3D printed, programmed through ROS
- Designed and built a golf ball launcher (slingshot trebuchet) achieving >46% efficiency (top of class) and a 4.54 range-to-weight ratio; modeled in SolidWorks and 95% 3D printed

## Certifications

- Solidworks CSWA-Mechanical Design

Dec 2023

## Skills

SolidWorks, Robotics Kinematics, ROS Programming, Inventor, Rapid Prototyping, Robotics Systems