SB Shreyas Bharath

MECHANICAL ENGINEERING · ROBOTICS · CARNEGIE MELLON

I build, test, and refine *physical systems.*

I'm a mechanical engineering and robotics student interested in aerospace structures, experimental testing, and hardware that has to work beyond the CAD model.

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CURRENT FOCUS

Connecting structural dynamics, vehicle aerodynamics, and hands-on design across aerospace, automotive, and robotics.

EDUCATION	GRADUATION	BASED IN	WORKING WITH
B.S. Mechanical Engineering Additional Major in Robotics	**May 2029**	**Pittsburgh, PA**	**CAD · Test · Hardware**

01

Design

Mechanisms, packaging, and CAD

02

Build

Fabrication and rapid prototyping

03

Test

Instrumentation and experiments

04

Iterate

Failures turned into better hardware

SELECTED WORK

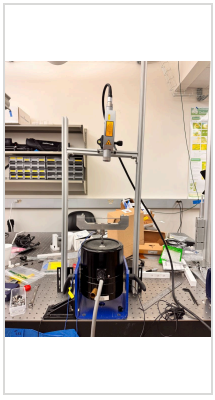
Engineering in context

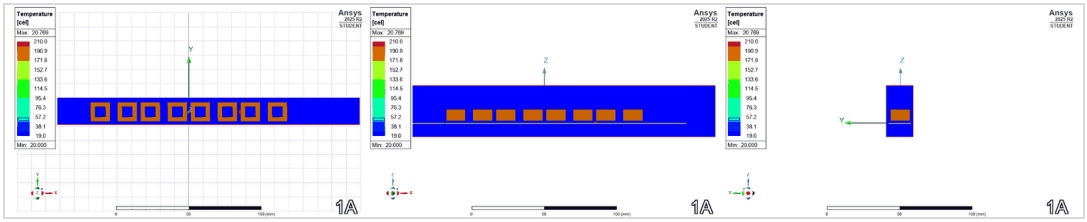
Projects spanning experimental research, product hardware, mechanism design, and assistive technology.

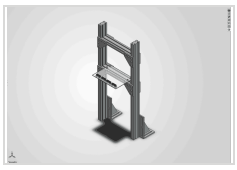
RESEARCH · STRUCTURAL DYNAMICS — 2026

01 Thermally controlled nonlinear beam testing

Developed an induction-heating approach for a nonlinear beam experiment after lamp and heat-gun concepts introduced uneven heating and risked affecting the test setup.







+30°C	1–25 A	Non-contact
controlled measured temperature rise	simulated current sweep in ANSYS Discovery	laser velocity measurement support

ANSYS Discovery · Siemens LMS SCADAS · Modal testing · Fabrication

PRODUCT HARDWARE · CMU BUSINESS TECHNOLOGY GROUP — ONGOING

02 OpenGym occupancy hardware

Redesigned a campus gym sensor enclosure after earlier versions failed in real-world use. The improved enclosure is currently deployed while an IR-based counting system is in development.





SolidWorks · Arduino · IR sensing · LiDAR

MECHANICAL DESIGN 2025

03 Automated medication dispenser

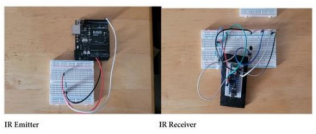
Designed and fabricated the internal mechanism for a prototype that dispensed one marble at exactly 60 seconds. Reworked a three-gear layout into two gears to resolve an enclosure-clearance failure.

SolidWorks | Gear ratios | 3D printing | Laser cutting

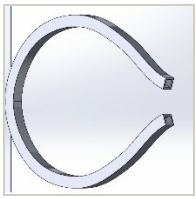
ASSISTIVE TECHNOLOGY 2023–2025

04 Wearable eye-contact device

Contributed CAD, Arduino code, circuits, and IR sensing to a patent-pending wearable intended to encourage eye-contact behavior in children with Autism Spectrum Disorder.







Arduino | SolidWorks | IR TX/RX | Breadboarding

EXPERIENCE

Where I've applied it

Research, engineering teams, and four years of competitive robotics.

MAY – AUG 2026
HOUSTON, TX

RICE UNIVERSITY

Nonlinear Vibrations & Structural Dynamics Research Intern

Designed a controlled induction-heating system, supported experimental modal testing, and fabricated a mount for non-contact laser velocity measurement.

AUG 2025 – PRESENT
PITTSBURGH, PA

CARNEGIE MELLON RACING

Aerodynamics Engineer

Supporting aerodynamic development for CMR's Formula SAE race car using SolidWorks, Luminary CFD, and FEA to design and analyze components while coordinating integration with monocoque and suspension teams.

JAN 2026 – PRESENT
PITTSBURGH, PA

CMU BUSINESS TECHNOLOGY GROUP

Hardware Engineer · OpenGym

Developing occupancy-sensing hardware and improving the mechanical durability and packaging of devices used on campus.

DEC 2023 – MAY 2025
WACO, TX

BAYLOR UNIVERSITY

ASD Device Research Assistant

Built and iterated a sensor-integrated wearable through SolidWorks design, Arduino programming, component selection, and circuit troubleshooting.

AUG 2021 – MAY 2025
FULSHEAR, TX

GOLDEN WARRIORS ROBOTICS

Build Lead · FIRST Robotics Competition

Led hands-on robot fabrication and troubleshooting for a 120-member team, mentored younger members, and supported a Texas State Championship and World Championship qualification.

CAPABILITIES

Tools I bring to the bench

A practical toolkit built across mechanical design, testing, fabrication, and embedded hardware.

01

Design + Simulation

SolidWorks, Luminary CFD, ANSYS Discovery, OpenRocket, FEA, mechanism design, packaging

02

Test + Instrumentation

Siemens LMS SCADAS, modal shaker, accelerometers, laser vibrometer, IR temperature measurement

03

Fabrication

CNC machining, 3D printing, laser cutting, breadboarding, assembly, rapid prototyping

04

Programming + Controls

Arduino, Python, C, MATLAB, IR sensors, component selection, circuit troubleshooting

Looking for a hands-on engineering intern?

I'm interested in mechanical, robotics, aerospace, automotive, test, and hardware engineering opportunities.

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