Murtaza Boriyawala

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https://murtazamb.github.io/Landing-Page/

SUMMARY

I am a Mechanical Engineering student skilled in SolidWorks, CNC, laser fabrication, prototyping, manufacturing processes, and MATLAB, seeking opportunities in design and manufacturing roles to apply technical expertise and hands-on experience.

EDUCATION

University of Massachusetts Amherst | BSc in Mechanical Engineering — Amherst, MA | **May 2027**

- Minor in Business — **GPA:** 3.32
- **Deans List:** Spring 2024 & Spring 2025 & Fall 2025
- **Chancellors Award:** $16,000 Scholarship
- **Relevant Courses:** Statics, Dynamics, Thermodynamics, Material Sciences, Strength of Materials, MatLab, Probability and Statistics, Fluid Mechanics, Design of Mechanical Components, Manufacturing Processes.

SKILLS

Technical Skills: SolidWorks, Rapid Prototyping, Technical Drawing analysis, Material Selection, Sourcing and Researching, CNC Machining, Laser Metal Cutting, 3-D Printing.
Soft Skills: Problem Solving and troubleshooting, Time management, Reliability, Adaptability, Collaboration, Communication, Attention to Detail.

EXPERIENCE

Incoming Teaching Assistant | MIE 275: Probability and Statistics for Engineers — Amherst, MA |**10/2025- Present**

- Recently joined the team and will assist in improving an existing car to compete in the Shell Eco-marathon in Indiana.
- Will be working on the brakes team, where I will work on designing the axels, fixing the steering rod and finding the ideal brakes for the car.
- Currently working on integrating a new brakes system into the car, designed around newly acquired hydraulic brakes.

OFFICEBASE.AE | Intern — Dubai, UAE | **Summer 2024, Summer 2025**

- Developed knowledge of furniture design standards and ergonomics applied in commercial office setups.
- Invited to return for a second term based on strong performance and contribution to marketing and product operations.
- Learned key manufacturing processes by shadowing and assisting in factory operations, gaining exposure CNC machining, laser Metal Cutting machines, edge banders, material selection, and assembly workflows.
- Participated in on-site client visits to take accurate measurements and aided in adjusting existing drawings to meet custom layout and design requirements.

Mass Mileage | Brakes Team — Amherst, MA |**10/2025- Present**

- Designed and developed a mechanical actuation system to integrate hydraulic bicycle brakes into a competition vehicle for rear-wheel braking.
- Engineered a brake-pedal-actuated mechanism enabling automotive-style braking control, supporting vehicle safety and compliance for the Shell Eco-marathon.

PROJECTS

Car-Demo Project | Fundamentals of Electrical Engineering — Amherst, MA | **10/2025-12/2025**

- Designed and built a microcontroller-controlled RC car using Arduino, DC motors, ultrasonic sensor, TIP120 transistor, and discrete electrical components for motor control and obstacle detection.
- Programmed and tested embedded control logic using ultrasonic distance thresholds to activate a red LED when an object is detected within **3 feet** and a green LED during unobstructed straight-line motion, validating reliable system performance.

Fixture Design and Manufacturing | Manufacturing Lead — Amherst, MA | **09/2025-12/2025**

- Designed and developed a fixture to securely hold machined parts for use in an automatic sub-assembly machine, ensuring full part constraint during operation.
- Collaborated with cross-functional teams to interpret engineering drawings, create SolidWorks models, and validate designs through iterative 3D-printed prototyping and machine testing.

Lightweight Wrench Design & Manufacturing | Team Member — Amherst, MA | **11/2025- 12/2025**

- Designed and optimized an ultra-lightweight M8 wrench in SolidWorks using by-hand calculations and ANSYS FEA to meet strict torque (**250 in-lb**) and mass **(<32.6 g**) constraints.
- Manufactured and tested the final design using machining processes and mechanical testing, including torque testing and three-point bend testing, to verify structural integrity.