VEDANT GABHAWALA

Email: gabhawalavedant@gmail.com | Phone Number: +1 (410) 469 0808 | Website: https://vgabhawala.github.io/index.html

An aspiring design oriented, mechanical engineer seeking to deepen my knowledge in design processes and production.

EDUCATION

Stanford University, Stanford, USA **Expected May 2026**

Master of Science in Mechanical Engineering (Depth in Design Methodology | Breadth in Fluid Mechanics) | 3.87 GPA

Johns Hopkins University, Baltimore, USA **May 2024**

Bachelor of Science in Mechanical Engineering and Economics Minor | 3.92 GPA

Academic Awards: Dean's List (All Semesters), Tau Beta Pi Honor Society member, Departmental and General Honors

Design Awards: Dean's Design Choice Award for the Underwater Camera System Project

Relevant Coursework: Action Design Lab, Manufacturing, CAD, Engineering Design Optimization, Robot Sensors Actuators

TECHNICAL SKILLS

- **Software**: Engineering Design, Creo, Fusion 360, SolidWorks CAD, MATLAB, Python, Machine Learning, Autodesk Revit, C++, Microsoft Office, Power BI and Automate, Arduino UNO, ANSYS Mechanical, ANSYS Fluent, XFLR5, Tinker CAD
- **Engineering Specific**: Soldering, Mill, Lathe, 3-D Printing, Laser Cutting, Electrical Skills, Finite Element Analysis, GD&T

WORK EXPERIENCE

AI and Mechanical Engineering Intern – **CRH America** – California **May 2025 – Present**

- Reverse-engineered equipment using Design X and SolidWorks, reducing manufacturing costs by 15% through CAD designs
- Designed Vision AI flows using Agentic AI and Snowflake to monitor manufacturing safety compliance and performance
- Conducted quarry pit CAD modeling, developing speed and trucking efficiency models that reduced operational costs by 12%

Formula Solar Car Designer – Stanford University – California **March 2025 – Present**

- Led development and optimization of aerobody designs using CAD, CFD and FEA, improving aerodynamic efficiency by 8%
- Designed brake line housings and contributed to assembly, routing, and mechanical integration of the vehicle's braking system
- Overhauled and implemented brake and battery cooling duct designs, battery slicing for integration, and associated fan wiring

Mechanical Engineering Intern (CFD and FEA) – Drizzle Health – Maryland **June 2024 – August 2024**

- Increased the safety factor of the company's centrifugal tube design by 4x through FEA, stress analysis and material selection
- Enhanced TB bacteria capture by 22% in millifluidic channels through innovative designs developed using ANSYS Fluent
- Optimized polymer grafting process, increasing grafting density by 12% through experimental testing and material analysis

Data Science and Sustainable Energy Intern – Walter P Moore – Washington DC **May 2023 – August 2023**

- Engineered and analyzed material strategies for mechanical systems, leveraging custom tools to cut CO_2 emissions by 15%
- Built data visualization tools and dashboards to improve performance, and accuracy of EPD and mix designs by 40%

Sustainable Energy Course Designer – **Johns Hopkins University** – Maryland **May 2022 – August 2022**

- Formulated a comprehensive four-week summer course on clean, renewable energy technologies for high school seniors
- Engineered and conducted multifaceted lab experiments, promoting hands-on learning with sustainable materials and methods
- Developed a solar-powered and wind-powered RC car, energy-usage ArcGIS map, and an ocean wave energy converter

PROJECTS

Underwater Camera System Capstone Project **September 2023 - May 2024**

- Optimized SolidWorks assemblies for the 360° camera system, improving manufacturability through modeling and GD&T
- Conducted FEA to validate stress, strain, and deflection under real-world loading, optimizing performance and materials

Product Design Soccer Game **January 2025- March 2026**

- Designed a desktop soccer game in SolidWorks, integrating TPU and modular assemblies for a compact, durable product
- Created a functional prototype with an actuator-driven goalkeeper applying iterative design principles to optimize usability

Hardware Automated Blinds Operator Project **April 2023 – December 2023**

- Built a solar-powered window blind operator with 3D-printed electronics enclosure using mechanical design and Arduino

Manufacturing Projects **January 2022 - May 2022**

- Designed and manufactured a Stirling engine using GD&T, CAD, advanced machining, and assembly processes
- Fabricated, tested, and evaluated the performance of a counterflow heat exchanger with a custom designed 3D printed baffle

EXTRACURRICULAR ACTIVITIES

- **JHU Baja Engineer** – Partnered in the development of the steering system of the off-road car for the JHU Baja Racing Team