VEDANT GABHAWALA

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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 Fluid Mechanics | Breadth in Data Science) | 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

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

- Led development and optimization of split wheel shroud prototypes using CFD and FEA to improve aerodynamic efficiency
- 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**

- 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
- Increased the safety factor of the company's centrifugal tube design by 4x through FEA, stress analysis and material selection

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

- Transformed lifecycle data workflows using Excel, Revit, Python, Power Automate, Power BI and machine learning
- Built data visualization tools and dashboards to improve performance, and accuracy of EPD and mix designs by 40%
- Engineered and analyzed material strategies for mechanical systems, leveraging custom tools to cut CO_2 emissions by 15%

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

Auto-Workshop Intern – Mercedes Benz – Mumbai, India **July 2019 – August 2019**

- Observed and facilitated mechanics in checks and refurbishment of ATF fluids and MOE tires of 35 vehicles per week
- Executed repairs on the OEM EPC and BAS system, W221, W204 and W205 chassis, and 1.6 L M166 I4 engines
- Introduced changes to the order of repairs and MB Star Diagnostic tool to improve the workshop's efficiency

PROJECTS

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

- Partnered with the National Aquarium to design a 360° underwater camera system using CAD, Arduino UNO and Python

Distinction in Research Project **January 2025- March 2026**

- Utilized experimental fluid mechanics to conduct research on glacier melting, enhancing insights into climate change effect

MATLAB Project **April 2021 – December 2022**

- Analyzed the effect of a change in attack angle of the rear wing of an F-1 car on lap time around Monza

Stirling Engine Project **January 2022 - May 2022**

- Designed and manufactured a Stirling engine using GD&T, CAD, advanced machining, and assembly processes

Wright Brother's Aircraft Redesign Project **January 2023 - May 2023**

- Transformed the Eiffel 10 airfoil wing, using XFLR5 to analyze the dihedral angle, wingtip twist and taper ratio change

EXTRACURRICULAR ACTIVITIES

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