

AAYUSH DUTTA

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Sep 2025 - Aug 2026
Master of Engineering in Mechanical Engineering (Advanced Manufacturing & Design) GPA: 5.0/5.0

GEORGIA INSTITUTE OF TECHNOLOGY Aug 2020 – Dec 2024
Bachelor of Science in Mechanical Engineering, Minor: Computer Science GPA: 3.74/4.00

Relevant Coursework: Finite Element Analysis, Design for Manufacturability, Composite Materials, Heat Transfer, Fluid Mechanics, Thermodynamics, Control Systems, Machine Design, Manufacturing Systems, Additive Manufacturing, Computational Design, Systems Optimization

WORK EXPERIENCE

TESLA Austin, TX
Mechanical Design Engineer Intern – LV Architecture Jan 2025 – June 2025

- Took ownership of **23 wire harnesses** for low-voltage distribution systems, optimizing manufacturability and assembly.
- Spearheaded the **integration of camera cleaning technology** into wire harnesses for the Model Y Robotaxi for 200 vehicles.
- Automated harness design workflows using Python & CATIA to **accelerate CAD fitment validation across 3 vehicle types**.
- Optimized Cybertruck harness packaging, **cutting assembly time by 20%** and improving thermal reliability.

THE COCA-COLA COMPANY Atlanta, GA
Freestyle Innovation Centre – Senior Fluidics Engineering Co-Op May 2024 – Aug 2024

- Performed **20+ fluidic validation tests** to calculate pressure drop, temp. gradients and dynamic viscosity of sugar in Sprite.
 - **Automated the dispenser testing** to present pressure, carbonation and temperature using **two python scripts** for beverages.
 - **Standardized thermal load calculations for the company** by developing **3 mathematical systems** using a Coke software.
- Freestyle Innovation Centre – Junior Fluidics Engineering Co-Op* Jan 2023 – Dec 2023

- Developed a proof of concept for a new Freestyle dispenser, **completing 5 iterations** of CAD modelling and prototyping.
- Collaborated with procurement to fabricate an injection-molded part, achieving **cost savings of \$200 per dispenser**.
- Proposed **12 design improvements** like using an additional valve to address pressure drops caused by a longer python tube.

CARRIER MANUFACTURING Gurugram, India
Engineering Department – Learning Module Intern June 2019 – July 2019

- Assisted the engineering department on designing **4 commercial AC units** using SOLIDWORKS and REVIT.
- Oversaw **5 testing calculations** for the total heat rejected from a new home unit using a thermal chamber.
- Assisted with the design of a new prototype in accordance with **15 Indian environmental safety regulations**.

LEADERSHIP

ME 4182 – CAPSTONE DESIGN Atlanta, GA
Jet Ski Attachment for Pontoon Boat – Engineering Lead May 2024 – Dec 2024

- Worked with the project sponsor, faculty advisor and 7 teammates to ensure overall goal alignment and **raise \$6000**.
- Designed a mechanism that was responsible for using a pontoon boat to **tow 2 jet skis** with limited user assembly.
- Improved the design by adding a mechanism which allows a single **jet ski to tow the pontoon boat** in an emergency

GT MOTORSPORTS – FSAE Atlanta, GA
Mechanical Design Engineer (2021) ->Chassis Lead (2022 – 2023) Jan 2021 – Aug 2023

- Led team of 8 to design and manufacture a 49.6kg carbon fiber monocoque, **improving stiffness-to-weight ratio by 15%**.
- Managed full tooling, and bonding process **achieving $\pm 0.25\text{mm}$ tolerance and 30% rework reduction** across sub-teams.
- **Conducted FEA and 4-point bending tests** verifying >95% of predicted stiffness and ensuring FSAE compliance.
- **Reduced assembly weight by 12%** through design and DFM analysis for chassis components using SolidWorks.

SKILLS/INTERESTS

Technical: SOLIDWORKS, CREO, MATLAB, Excel, Python, Arduino Development, Mechatronics Components, MS Office, Power Tools, NI Toolkit, GD&T, CNC Processes, FPC Design, FEA, CATIA, NX, Capital XC, SPC, Factory Layout Design

Languages: English, Hindi, Bengali, Spanish, German.

Applications: Computer-aided Design, Image Processing, Physics Simulation, App and Website Development, CSV Data Processing