SIDHARTH SUNDAR

B.Tech Mechanical Engineering (Minor: EV Technology)

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CAREER OBJECTIVE

I am a final-year mechanical engineering student who enjoys solving problems and understanding how things work. I'm especially interested in vehicle design, fluid flow, and how shapes affect performance. Through hands-on projects, I've developed a strong sense of curiosity, focus, and patience. I'm now looking to apply these qualities in a role where I can learn more and contribute to real-world innovations in automotive design, research, or simulation.

EDUCATION

- **B.Tech in Mechanical Engineering (Minor: EV Technology)** — *CGPA: 8.35/10*
  National Institute of Technology (NIT), Puducherry — Nov 2022 – Jul 2026

TECHNICAL SKILLS

- **CAD & Design Tools** NX CAD, AutoCAD, Fusion 360, CATIA
- **Simulation & Analysis** ANSYS (Fluent, APDL), Structural Analysis
- **Other Tools & Programming** Python (Intermediate), MATLAB/Simulink (Basic), MS Word, MS Excel
- **Automotive Domain** Aerodynamics, Battery Thermal Management
- **Soft Skills** Curiosity, Problem-Solving, Adaptability, Teamwork

EXPERIENCE

- **Project Intern – Heavy Vehicles Factory (HVF) Avadi**
  Ministry of Defence, India — May 2025 – July 2025
  - Developed algorithms for JetTank using Jetson Nano, ROS, and sensor fusion (LiDAR, RGB-D camera, IMUs); implemented path tracking, CSV waypoint navigation, and obstacle avoidance using contour-based camera processing.
  - Visited key production units including Transmission Shop, Running Gear, Forging, Turret Fabrication, Heat Treatment, and Final Assembly; observed assembly of Arjun, T-90, and T-72 MBTs.

PROJECTS

- **Thermal Conductivity using TPS 2500S**
  Lab-Based Project
  - Measured thermal conductivity of copper at -10°C, 21°C, and 60°C using TPS 2500S; achieved mean values up to 383.76 W/m·K.
  - Ensured high accuracy with 0.055% repeatability and 17 K sensitivity using Hot Disk sensor.
  - Calibrated system with stainless steel reference; conducted tests across varying sample temperatures and durations.

- **Hydrodynamic Study on Underwater Vehicle**
  ANSYS Fluent – CFD Simulation
  - Modeled conceptual submarine and Titan submersible bodies using Fusion 360; simulated external flow in ANSYS Fluent at 20, 40, and 60 m/s.
  - Excluded propeller thrust; focused on how outer hull shape affects wake formation, eddy zones, and pressure/velocity patterns.
  - Analyzed drag forces and observed shape-induced flow separation; achieved drag coefficients down to 0.297 using k- SST turbulence model.

- **CFD Analysis on Sports Ball**
  Aerodynamic Design Study
  - Modeled stationary golf ball to study airflow interaction and outer flow separation regions using ANSYS Fluent.
  - Explored drag and lift tendencies visually—no thrust or pressure analysis performed; findings used for conceptual aerodynamic understanding.

INTERESTS

- **Automotive Styling & Aerodynamics** Interested in high-speed car aesthetics and aerodynamic tuning.
- **Sketching and Doodling** Vehicle silhouettes, concept cars, spoiler designs.