Sandip Kumaar S

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EDUCATION

CEG Campus, Anna University — 8.06 - CGPA
Bachelor of Engineering in Mechanical Engineering — *Oct 2022 – June 2026*

DAV Public School, Velachery — 96.6%
HSC - Higher Secondary Certificate — *June. 2020 – June 2022*

EXPERIENCE

Product Design Intern - Mahindra Research Valley — *June 2025 – July 2025*
- Designed and optimized a **Magnesium Alloy Wheel** using Catia V5, as part of the **Steering and Wheel Ends** department. Weight reduction of **30%** from conventional alloy wheels.
- Performed FE Analysis like **CFT, RFT** and **13 deg impact test** for the alloy wheel on Siemens NX.

Steering Lead - CEG Motorsports (Electric ATV) — *April 2023 – Present*
- Responsible for Design, Development and Integration of the **steering** and **suspension** sub-systems.
- Member of the **CAE** team and conduct various **Structural, Weld** and **Vehicle dynamics** related analysis.

Production Intern - Seizo Automotive Pvt Ltd. — *June 2024 – July 2024*
- Performed **cycle time analysis** project for all the sheet metal components.
- Gained knowledge about working of various departments and **sheet metal operations**.

Structural Design Intern- Singorison — *December 2022 – July 2023*
- Compiled a **material selection report**, documented standardized manhole dimensions, and studied the working mechanism of the robot.
- Performed competitor analysis and **benchmarking** of existing robotic systems.

Associate Startup Head- AUSEC — *August 2023 – January 2025*
- Led events like Enantra, Startup Weekend, and Idea Crunch, engaging 200+ participants and startups.
- Secured sponsors and onboarded industry mentors for key entrepreneurship events.

PROJECTS

Topology Optimization of Steering Knuckle | *Solidworks, Ansys, Fusion* — *July 2025 – Present*
- Perform topology optimization of an ATV steering knuckle using generative design on Fusion 360, and validate its structural integrity through sensor-based load testing and FEA correlation.

Pin on Disc Wear Test Model | *Solidworks, AutoCAD* — *April 2024 – July 2024*
- A cost effective working model to find the friction coefficient of materials by integrating the setup on a precision lathe machine. The load is applied by a pressure regulated pneumatic actuator.

Pneumatic Bottle Cleaner | *Arduino* — *April 2024 – June 2024*
- A cleaning tool reciprocates through a bottle or any tubular structure to cleanse it. It is actuated by a pneumatic circuit controlled by an Arduino. It is a low cost option for small scale industries.

Analysis and Comparison of Otto Engine Using a Python Program | *Python* — *April 2024 – May 2024*
- The program calculates the efficiency of three real world IC engines, plots T-S , P-V Graphs and compares them.

ACHIEVEMENTS

- **Overall AIR 4 in eBAJA 2024 & AIR 12 in eBAJA 2025** – Conducted by SAE INDIA (CEG Motorsports).
- **AIR 1 in MegaATV 2025** – Conducted by Autosports (CEG Motorsports).
- **AIR 1 in 2024 & AIR 2 in 2025 for CAE Report eBAJA** – Conducted by SAE INDIA (CEG Motorsports).
- **Overall champion in Sports Day 2020** – Conducted by DAV Public School.

TECHNICAL SKILLS

Design: **Solidworks, Catia V5, AutoCAD, Fusion, Creo**
Simulation: **Siemens NX, Ansys, Altair Motionview, Lotus, Hypermesh, Matlab Simulink**
Data Handling: **PPT, Excel, Word**
Production: **Time study analysis**
Programming Languages: **Python, C**