

SIDHARTH SIVA S

Simulation engineer

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Summary

Mechanical engineering student specializing in engineering design and simulation. Skilled in SolidWorks, Fusion360, and ANSYS for structural and thermal analysis. My hands-on experience includes participation in a drone development team focused on frame design and performance evaluation. Interested in contributing to engineering research and development through computational analysis and engineering design.

Skills

CAD & Design: SolidWorks, Fusion360

Simulation & Analysis: ANSYS, Gazebo

Programming: Python, C

Documentation tools: MS word, MS excel

Experience

FEA/CFD Intern

December 2025 – present

Energy Research Laboratory -TKM College of Engineering, Kollam (Onsite)

Tools Used: Ansys, SolidWorks, Excel

- **Performed FEA of over 15 critical structural components** involved in the fabrication of a renewable energy prototype, using ANSYS Workbench..
- Evaluated, **stress distribution, deformation, and structural performance** to support design validation and component reliability.
- Studying CFD methods for future aerodynamic and fluid flow analysis of the system.
- Collaborating with 2 PhD scholars, 3 faculty advisors, and senior interns on simulation studies, design evaluation, and technical documentation.

Avionics and simulations head

May 2025 – present

SAE ADDC Drone team -TKM College of Engineering, Kollam (Onsite)

Tools Used: Ansys, SolidWorks, Gazebo

- Contributed in the **material selection** for several parts of the drone after numerical calculations were done.
- Evaluated, **temperature distribution, heat flux** to check component stability under the thermal effects caused by electronic's heating .

Projects

Design and analysis of advanced ventilated mattresses for Bedsores prevention | November 2025 – March 2026

- Analyzed heat transfer in conventional mattresses to identify existing problems, then developed a new design that features enhanced airflow and greater heat dissipation at the contact surface and validated its performance using computational methods in Ansys.

Microstructure analysis of HSLA steel |

June 2025 – October 2025

- Carried out a detailed microstructural analysis of high-strength low-alloy steel using an optical microscope and determined the phase composition. Also performed compressive and tensile tests on the selected material.

Automated hill hold assist system |

February 2025 – May 2025

- Developed a prototype of a compatible hill-hold assist system that can be installed in manual cars, designed to help beginner drivers, individuals with slower reflexes, and similar users.

Certifications & Awards

- **Internet of Things – NPTEL (2025):** Completed 12 weeks practical study on raspberry pi programming, cloud computing, embedded systems and system architecture.
- **Power BI and AI - Be10x (2024).**
- **Secured Kerala Rank 1 and in top 1% in India -(2025)** in SAE autonomous drone development challenge, also achieved two technical category awards.
- **1st Runner Up, Hult Prize-(2025)** On campus finals at TKM college of Engineering, Kollam

Education

B.Tech Mechanical engineering
TKM College of Engineering, Kollam

Pursing
CGPA: 9.4 / 10

Higher Secondary Education- Class 12
Devi Vilasom Higher Secondary School, Thalavoor , Kollam

2021-2023
Marks: 1196/ 1200(99.6%)

Secondary Education- Class 10
St. Thomas Central School, Punalur , Kollam

2020
CGPA: 10/ 10(97.4%)