# Gokula Krishna Tavva

• +91 9515040803 • gktavva@gmail.com • f20220372@pilani.bits-pilani.ac.in • Linkedin • Website

## Education

**Birla Institute of Technology and Science** • Pilani, India — Oct 2022 – Present
*Bachelor of Engineering* • *Mechanical Engineering* • GPA: 9.22/10.0

## Technical Skills

- **Simulation:** ANSYS Fluent, OpenFOAM, Basilisk C, Simscale, ANSYS Structural
- **Designing**: SOLIDWORKS, Autodesk Fusion, Creo Parametric, Autodesk AutoCAD, OpenVSP
- **Others**: Python, MATLAB, C++, C, Simulink, LaTeX, Ardupilot

## Work Experience

**Undergraduate Teaching Assistant** – Birla Institute of Technology and Science – Pilani, India — Aug 2024 – May 2025

- **Workshop Division** | (Jan 2025 – May 2025) | Aided in preparing standard operating procedures and lab manuals.
- **Applied Thermodynamics** | (Aug 2024 – Dec 2024) | Aided the faculty in conducting the evaluations.

**Summer Intern** – TATA Advanced Systems Limited – Nagpur, India — May 2024 – Jul 2024

- Developed a color-coded fixture management system to improve management and reduce search time by almost **80%**.

**Flight Testing Engineer and CAD Designer** – Vimana Aerotech – Pilani, India — Sep 2023 – Jan 2025

- Aided as a support tester for a tailsitter UAV developed by rapid prototyping for extensive surveying purposes with **4 times** longer duration flights. Simultaneously, worked on CAD modeling of custom hatches and mounts of a hexacopter.

## Projects

**SBLI in Hypersonic Double-Cone Configurations with Blunt-Nose** — Aug 2025 – Present

- Performing IDDES-based simulations of shock–boundary layer interactions over hypersonic double-cone geometries to assess effects of bluntness, cone angle, and Mach number.

**Hybrid CFD/DSMC modelling of high-altitude rocket plumes** – Dr. George Bowden — May 2025 – Present

- Developing a hybrid CFD and DSMC model for exhaust plume expansion to understand ionospheric disturbances due to rocket-induced atmospheric waves.

**Development of 3D mesh generator for aerodynamic flows** – Dr. Aravind Balan — May 2025 – Present

- Developing a 3D mesh generator utilizing metric-based anisotropic adaptation to enhance accuracy and efficiency in Finite Element Method solvers for aerodynamic flow simulations.

**Optimization of a Conveyor-Style Dehumidifying Chamber** – Dr. Ranganayakulu & Dr. Soni — Mar 2025 – Jun 2025

- Performed simulations on an industrial-level multi-stage conveyor-style dehumidifying system to optimize airflow.

**Numerical analysis on 'j' and 'f' factor for Offset Strip Fins** – Dr. Ranganayakulu — Jun 2024 – Feb 2025

- Improved understanding of offset strip fin performance by varying flow length and developed numerical correlations.

## Publications

**Numerical formulation of Colburn j factor and Fanning friction f factor correlations for offset strip fins in compact heat exchangers using Computational Fluid Dynamics. (Preprint)** – SSRN — Jun 2025

- This study presents the development of continuous correlations for the Colburn j factor and Fanning friction f factor in rectangular offset strip fin compact heat exchangers.

**Vimana Aerotech and the development of a tail-sitter VTOL drone for research as well as commercial facilitation.** – International Astronautical Federation — Oct 2024

- Co-author in the paper published in the proceedings of the 75th International Astronautical Congress in Milan, Italy.

## Extracurricular Activities

**Team Captain** – Inspired Karters Gravity – Pilani, India — Jun 2024 – Jun 2025

- Spearheaded a **50-member** team, I guided our efforts to achieve **All-India Rank 10** in the electric category of the ISIE IKR Competition. Managed budget of **INR 1000K+** and raised **INR 400K+** in team funding.

**Chassis and Aerodynamics Engineer** – Team BITS - SEM – Pilani, India — Apr 2023 – May 2024

- Assisted the team in designing a carbon-fiber monocoque chassis with a **Cd of 0.18** for the prototype class of Shell Eco-Marathon Asia-Pacific and designed spaceframes for **100%** ethanol-run vehicles.

## Awards

**Project Presentation Competition** – Issued by APOGEE-2025, BITS Pilani — Apr 2025

- Secured **1st** Place among **237** participants in the competition and was awarded a cash prize of INR 35K.

## Certifications

- **SOLIDWORKS CAD Design Associate (CSWA)** – Issued by Dassault Systèmes — Sep 2024