



K Reddy Mohammed Sadiq

Roll No.:240003036

B.Tech

Mechanical Engineering

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology Indore	7.65	2024-Present
Senior Secondary	TSBIE Board	98%	2024
Secondary	ICSE Board	91%	2022

PROJECTS

- Powered-Lift Wing Design for STOL Applications** October 2025 - December 2025
Inter-IIT Tech 14.0
 - Optimized airfoil selection for a STOL aircraft targeting high lift and lift-to-drag ratio.
 - Performed CFD simulations and numerical validation, including mesh independence and turbulence modeling.
 - Designed and analyzed high-lift devices (flaps, slats, ducted concepts) to improve flow attachment.
 - Evaluated aerodynamic center location and longitudinal stability using theory and CFD.
 - Gained working exposure to propulsion concepts, analytical modeling, and PINNs.
- Gesture Control Drone** July 2025- August 2025
Aeromodelling Club, IIT Indore [Google Drive](#)
 - Built a real-time hand-gesture-based drone control system using Python and computer vision.
 - Converted gestures into MAVLink flight commands via ArduPilot SITL for standardized control.
 - Enabled wireless command processing using Raspberry Pi between laptop and flight controller.
 - Implemented safe autonomous flight execution with RTL and onboard failsafes.
- Development and Analysis of a High-Performance Suspension System for Track use** May 2025-July 2025
IITISOC-2025 DEiMoS [Google Drive](#)
 - Designed and optimized a Formula Student double wishbone suspension geometry using kinematic analysis.
 - Modeled suspension components in SolidWorks and validated through load calculations and ANSYS FEA.
 - Evaluated suspension performance under bump, braking, cornering, and combined load cases.
- Grip Crawler** June 2025-October 2025
Akruti-2025 [Google Drive](#)
 - a stair-climbing wheel with spiked and rubberized profiles for improved traction and stability.
 - Optimized wheel-step interaction geometry to ensure controlled climbing and effective load transfer.
 - Integrated the wheel system with the wheelchair to maintain balance and center-of-gravity stability during stair operation.
- Autonomous Inventory Management System** May 2025 - October 2025
NXP AIM-2025 [Google Drive](#)
 - Built a fully autonomous inventory management solution covering exploration, localization, and scanning.
 - Enabled accurate shelf detection and self-aligned navigation for reliable object scanning.
 - Integrated object identification logic for automated inventory recognition.
- Intelligent Wastewater Recycling and Micro-Hydro Power Generation System** May 2025 - December 2025
Vishwakarma-2025
 - Developed a sensor-based system to segregate wastewater using pH, turbidity, and conductivity data.
 - Integrated a micro-hydro power generation system to supply energy for onboard sensing and control electronics.
- GO CART** september 2025 - Present
IVDC Club, IIT Indore
 - Actively involved in the fabrication of a go-kart chassis and structural components for the IKR competition.
 - Worked on steering geometry setup and system-level assembly with emphasis on safety and performance.
- EMG BASED BONIC ARM** september 2025 - Present
Robotics Club, IIT Indore
 - Designed a myoelectric bionic arm in SolidWorks with focus on mechanical layout.
 - Working on EMG signal acquisition and sensor-controller hardware integration.

TECHNICAL SKILLS

Design: Fusion 360; SolidWorks;OpenVSP
Simulation: Ansys-Static Structural,Fluent,CFX,Structural Optimization,OptiSlang,LSDYNA;Simulink
Hardware Platforms & Microcontrollers: Arduino, ESP32/ESP8266, STM32 and Rasberry pi
Other Skills: Circuit design, lathe milling, welding, cutting, soldering,sheet bending , 3D printing, Laser Cutting
Coding Languages: python,C++, MATLAB,latex.

KEY COURSES TAKEN

- **Core Courses:**Solid Mechanics, Fluid Mechanics, Principles of Industrialization, Thermodynamics, Fundamentals of Vibration, Materials Science and Engineering, Optical Measurement Techniques in Fluid Mechanics

POSITIONS OF RESPONSIBILITY

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|---|------------------------------------|
| • Inventory Head ,Aeromodelling Club, IIT Indore | <i>September 2024-present</i> |
| • Core Member ,IVDC Club , IIT Indore | <i>September 2024-present</i> |
| • Core Member ,Robotics Club , IIT Indore | <i>September 2024-present</i> |
| • Core Member ,Science and Technology Council, IIT Indore | <i>September 2024-present</i> |
| • UG Teaching Assistant ,Makerspace Laboratory, IIT Indore | <i>July 2025-present</i> |
| • Core Member ,CAE club, IIT Indore | <i>October 2024–September 2025</i> |

ACHIEVEMENTS

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| • 6th position ,Inter-IIT 14.0–LAT Aerospace | <i>2025</i> |
| • Gold Medal ,IITISOC-2025 under DEiMoS | <i>2025</i> |
| • Regional Finalist ,NXP-Aim 2025 | <i>2025</i> |