

Saranga Krishna Raghavendra

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Profile

I'm an engineer who likes to get things working - especially when it involves wheels, gears, and the thrill of making machines move. My experience spans from designing and validating high-performance suspension systems for BAJA ATVs to developing pneumatic automation setups, integrating robotics with AI vision, and optimizing manufacturing processes. With a strong foundation in CAD, FEA, and interdisciplinary prototyping, I bring an end-to-end approach to the table.

Education

MIT,Manipal, BTech in Mechatronics engineering.

Sept 2022 – May 2026

- **Coursework:** AI for Robotic Vision, Robot Dynamics and Control,Manufacturing Technology, Electric drives,Industrial Robotics, Sensor Technology,Design of Machine Elements, Robot Path Planning, Hybrid Vehicle Technology, Soft Robotics, Hydraulics and Pneumatic Systems, PLC based control system.

Technologies

- Solidworks, Catia v5, AutoDesk, Fusion 360,Ansys, ABB-RobotStudio, Matlab, Simulink, IPG-Carmaker, MSC-Adams car, ROS, windows packages, Python, Arduino, Lotus-Shark.

Experience

Head of Vehicle Dynamics, Team Manipal Racing – MAHE's official off road student project, Manipal.

Mar 2024 – Present

- Leading the design and development of the suspension system for TMR's all-terrain vehicle, applying advanced analysis techniques for a weight efficient yet durable design.
- Validated vehicle dynamics through a combination of physical testing with sensors and data acquisition systems (DAQ) as well as virtual simulations.
- Managing a team of juniors and colleagues to foster effective communication and create an efficient workspace.
- Responsible for the brake system and development of the same.
- Designed semi-trailing system for the rear suspension with a switchable 'passive-rear-steer' mechanism allowing the vehicle to be better at turning.
- Simulation and analysis of the car on IPG carmaker and MSC-Adam's car.
- Conducted taskphase (training sessions) for freshmen, helping them build practical skills in vehicle dynamics.
- Proficient in end-to-end design and manufacturing, focusing on in-house production [custom double wishbone, semi-trailing arms] to create high-performance components through thorough material analysis and engineering principles.
- Proficient in DFM, conducted DFMEA and PFMEA analysis according to ARAI standards and regulations for the designed components and processes. -
- 1st in Validation (simulation vs physical car), 1st in CAE, 2nd in Design, 3rd in the Endurance race and 3rd runner up overall at SAE-BAJA-2025.

Projects

ARS system for a BAJA atv.

ongoing

- A steer-by-wire system for all terrain vehicles to introduce all wheel steer to optimize corner-ing and performance.

R-hex bot for disaster management

ongoing

- a six-legged robotic platform for rough-terrain navigation in disaster zones, integrated with a **drone swarm** for aerial mapping, area surveillance, and coordinated search operations. Implemented real-time communication between ground and aerial units using **ROS**, with sensor-based obstacle detection and autonomous path planning.