

Mallikarjun A Katageri

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Profile

Enthusiastic Mechatronics Engineering student with foundation in sensor technology, control systems, actuation, and drives. Passionate about integrating hardware and software to develop intelligent systems, and aiming to apply these interdisciplinary skills to solve real-world industrial challenges through automation, and smart system design.

Education

Masters in Mechatronics, Vellore Institute of Technology (VIT) CGPA - 7.19/10	07/2024 – present Vellore, Tamil Nadu
Bachelor's in Mechanical Engineering, SDM College of Engineering and Technology (SDMCET) CGPA - 7.34/10	08/2018 – 06/2023 Dharwad, Karnataka

Projects

Energy Optimization in Swarm Robotics

- Developed an energy-aware swarm robotic system using Webots and e-puck robots with Python controllers.
- Implemented algorithms to minimize energy consumption during path navigation and collaboration.
- Focused on adaptive behavior based on individual robot energy levels. Validated automation logic and energy performance through simulation in a maze like environment.

Understanding ADAS: A Study of Autonomous Emergency Braking via MATLAB/Simulink

- Learned the working of the Autonomous Emergency Braking Assistance System (ADAS) by analyzing and simulating an existing MATLAB/Simulink model provided by MathWorks.
- The model demonstrated how vision and radar sensors are used together for sensor fusion to detect obstacles, calculate parameters like relative distance and speed, and trigger forward collision warnings or automatic braking to prevent accidents.
- This helped me gain practical insights into ADAS functionality, real-time decision-making algorithms, and the importance of system-level validation in autonomous safety systems.

Design and Development of FRP Waste Fiber Speed Breaker

- Recycled FRP waste material using a shredding machine to obtain usable fiber fragments.Used polyester resin as a binding agent to form composite mixtures with different FRP ratios.
- Fabricated speed breakers with FRP-resin ratios of 50:50, 60:40, and 70:30 for comparative analysis. Prepared test specimens and evaluated their mechanical properties as per ASTM standards. Conducted compression, bending, and fatigue tests to determine structural performance.
- Identified the 60:40 ratio as the most effective, withstanding up to 2 tons of load. Installed the final speed breaker prototype on the college campus for real-time testing and validation.

Skills

Matlab Simulink	Catia V5
Sensors Integration	Pneumatic and Hydraulic Circuit Design
Power BI	MS Office

Certificates

- Ready Engineer Certificate by Tata Technologies
- Certificate of Participation on 17 SDGs by IIT Dharwad and Lowe's India
- Training on Automation Technology by SDMCET-Bosch Rexroth Center of Excellence
- Data Analyst Certification by ExcelR Solutions Bengaluru

Internships

Intern, RSB Transmissions Ltd

08/2021 – 09/2021
Dharwad, KA

- Plotted Value Stream Mapping (VSM) to analyze the existing manufacturing process and identify inefficiencies. Studied each stage of production to detect bottlenecks and non value adding activities.
- Proposed optimized process flow to reduce cycle time and enhance overall productivity. Designed improved product and line layouts to streamline material movement and workstation arrangement.
- Aimed to achieve leaner operations with better workflow and reduced process delays.

Intern, AiVariant

12/2023 – 03/2024
Bengaluru, KA

- Analyzed restaurant data from the Zomato dataset using Microsoft Excel, Power BI, and Tableau. Cleaned and processed large datasets to build interactive dashboards and extract meaningful insights.
- Enhanced skills in data visualization, analysis, and presentation through hands-on project work. Worked with MySQL to create, manipulate, and query relational databases effectively.
- Gained practical experience in SQL, improving data handling and insight generation from structured data.

Languages

English



Kannada



Hindi



Extracurricular Activities

- Participation in Dramatic Competition.
- Participation in Technical Seminars
- Volunteering in Social Service Activities

Interests

Sketching, Volunteering in Social Service Activities, Script Writing, Tech Workshop Participation

Declaration

I solemnly declare that all the details furnished above are accurate and authentic to the best of my knowledge and understanding.

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