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EDUCATION

•**National Institute of Technology Warangal** — *2023-Present*
B.Tech in Electronic and Communication Engineering (Minor Degree) — CGPA: 9.33

•**National Institute of Technology Warangal** — *2022-Present*
B.Tech in Chemical Engineering — CGPA: 7.59

•**Narayana College** — *2020 - 2022*
Board of Intermediate Education, Telengana — Percentage: 95.8%

•**Pallavi Model School** — *2019 - 2020*
Central Board of Secondary Education — Percentage: 92.8%

EXPERIENCE

•**Mowito Robotics** — *Jun 2024 - Jul 2024*
Project Intern — Bengaluru , India

– Developed an eccentricity checking machine, achieving 97% accuracy, involving precision engineering and ROS2 integration with STM32 using OpenCV.
– Designed a robotic conveyor system, increasing automation efficiency by 40%, utilizing Fusion360 and STM32 integration.

•**Robotics Club NITW** — *Jan 2023 - Present*
Secretary and Project Incharge — Warangal , Telengana , India

– Developed advanced robotic arms and AGVs, improving operational efficiency by 25%, using ROS2 and precision engineering techniques.
– Led the team in eYantra and Robocon, showcasing innovative robotic solutions, focusing on autonomous navigation and object manipulation.

PERSONAL PROJECTS

•**Dynamic Live Location Tracking and Stop Request System for E-Carts** — *Nov 2024 - Dec 2024*
Created a real-time GPS tracking system for efficient location updates.

– Developed a real-time GPS tracking system, reducing response time by 30% through Firebase-powered location updates.
– Utilized ESP8266 and the TinyGPS++ library for seamless Wi-Fi communication and accurate GPS data parsing, achieving 99% data accuracy while storing and retrieving coordinates using Firebase Realtime Database.
– Architected a system for instantaneous GPS coordinate sharing via SMS, enhancing emergency response efficiency by 40%.

•**Autonomous Mobile Robot (AMR)** — *Oct 2024*
Developed an autonomous mobile robot (AMR) using ROS2 for navigation, obstacle avoidance, and path planning.

– Implemented SLAM (Gmapping) for real-time mapping and localization, improving the robot's navigation accuracy.
– Integrated LiDAR, ultrasonic sensors, and cameras for obstacle detection and avoidance, enhancing real-time decision-making.
– Utilized OpenCV for camera-based object detection, optimizing path planning and navigation in dynamic environments.

•**Moon Rover** — *Jan 2024 - Aug 2024*
An ISRO's robotic competition called IRoC-U.

– Developed and executed an advanced autonomous rover solution with auto-navigation and robotic arm capabilities, increasing operational efficiency by 40%, using V-SLAM and PID algorithms.
– Developing a V-SLAM navigation model, improving accuracy by 30% using Intel Real Sense Depth Camera on Nvidia Jetson Nano for image processing.
– Implemented PID algorithm for 30% smoother movement of robotic arm and speed control of rover motion in sandy terrains using Raspberry Pi, achieving precise object picking with Inverse Kinematics.

- **Waste Management Robot (WMR)** *Dec 2023*

Efficient waste management robot using Arduino IDE for sensor input and 3-axis robotic arm for segregation.

- Designed a sensor pad with 85% accuracy for identifying waste like plastic, metal, paper, wet etc., using sensors and Arduino Mega.
- Developed a 3-axis robotic arm, increasing segregation efficiency by 45%, for sorting waste into respective dustbins.
- Engineered an omnidirectional rover with a 15 kg holding capacity using Arduino Uno, improving waste handling efficiency by 45%.

- **5-Axis Robotic Arm** *Jan 2024*

Advanced 5-axis robotic arm employs OpenCV for color recognition and inverse kinematics for precise object placement

- Created a 5-axis robotic arm using high torque servo motors, achieving 95% precision in segregation applications.
- Leveraged advanced OpenCV color recognition to achieve 90% accuracy in object identification, employing inverse kinematics for precise placement.
- Executed PID algorithm for 30% smoother servo movement, ensuring precise control with minimal error, enhancing overall performance.

- **RFID Attendance System** *Nov 2023*

Designed an RFID attendance system to automate and streamline attendance tracking.

- Designed and implemented an RFID attendance system, automating student attendance tracking and increasing accuracy by 25%.
- Developed an interface to upload attendance data to Google Sheets, reducing manual errors by using Google Apps Script.
- Enhanced accuracy and efficiency in attendance management, providing real-time data access and reducing manual errors by 95%.

TECHNICAL SKILLS AND INTERESTS

Languages: Python , Javascript , C++ , Embedded C, R, HTML , CSS
Developer Tools: VScode, AutoCAD, Fusion360,Jupyter Notebook, Jetbrains, Arduino IDE, Microchip Studio, RPi OS, Blynk IoT, RemoteXY , Android Studio.
Databases:SQL, MongoDB
Technical Expertise : Robotics, Electronics, ROS2 (Robot Operating System 2) ,Machine Learning, Internet of Things(IoT), Embedded Systems , Sensor Integration , Mechanical Design , Web Development , App Development
Additional Projects: Quad copter , CNC Machine , Buglary Alarm System , Remote Controlled Car
Soft Skills: Effective communication , Leadership , Time management , Teamwork , Creativity, Problem Solving , Adaptability
Coursework: Electronic Engineering, IC Applications, Communication Systems, Digital Electronics, AutoCAD, Process Instrumentation, Problem Solving and computer programming, MATLAB
Areas of Interest: Industrial and Mobile Robotics

POSITIONS OF RESPONSIBILITY

- **Secretary,** Robotics Club NITW *2022-Present*

ACHIEVEMENTS

- **First Prize:** ECE's Hackathon NITW *November 2023*

- **4th Prize:** MJ College Hackathon *December 2023*

- **Top 150 Teams** in ISRO IRoC Rover Making Competition *January 2024*

- **Patent Filed:**Developed and applied for a patent for an EV GPS Locator. *December 2024*

- **Best Innovator and Best Innovation:** Innovation Garage Ideathon *January 2025*

- **First Prize:** Hitachi's Innothon *February 2025*