RAHIL ROSHAN R

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Professional Summary

A determined Robotics Engineer with a consistent track record in academics, possessing expertise in design software such as SolidWorks and CATIA V5. Proficiency in ROS, MATLAB, Python, and C++ has been developed, along with a strong interest in swarm robotics. Highly adaptable and a very quick learner, with excellent communication and problem solving skills

Projects

Electromagnetic Refrigeration system for Automated baby cradle **2023**

I developed an efficient cooling system using a Peltier module, utilizing its thermoelectric properties for effective temperature regulation. Additionally, I fabricated a highly functional crank and slotted lever mechanism, optimizing its design for improved mechanical efficiency. I also programmed an Arduino to control various sensors and developed an application for an automated cradle, enhancing its functionality and automation.

Smart Irrigation System Using Machine Learning **2025**

Developed an intelligent irrigation system leveraging IoT sensors and machine learning (Random Forest, XGBoost) to predict soil moisture levels based on environmental factors such as humidity and temperature. Integrated Arduino/Raspberry Pi for real-time data acquisition and automated water control, optimizing water usage and improving agricultural efficiency.

Autonomous Warehouse AGV with RFID and Line Following **2025**

Designed and implemented an autonomous guided vehicle (AGV) for warehouse automation using RFID-based navigation and line-following algorithms. Integrated ultrasonic sensors for obstacle detection and microcontroller-based control logic for efficient path tracking. Enhanced operational efficiency by enabling seamless inventory transport and automated logistics management.

Skills

- **Programming:** C++, Python
- **AI & ML:** TensorFlow, OpenCV, PyTorch
- **Robotics & ROS:** ROS, Gazebo, LiDAR Navigation, SLAM
- **Mechanical Design:** SolidWorks, CATIA V5
- **Soft skills :** Excellent Communication, Creativity, Consistency

Education

M.TECH Robotics and Automation 2024 - Present
Amrita University **SGPA : 9.18**

B.TECH Mechanical Engineering 2019-2023
Ahalia School Of Engineering & Technology **SGPA : 8.06**

HSS Computer Science 2017-2019
St Thomas HSS **Percentage : 95**