DEV GOTI

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EDUCATION

Texas A&M University **College Station, TX**
Master of Science in Electrical Engineering *August 2025 – May 2027*
Courses: Fall 2025 - Robotics and Spatial Intelligence, Linear Multivariate Systems, Probability and Random Processes for Information Science

National Institute of Technology Karnataka, Surathkal **Mangalore, India**
Bachelor of Technology in Electrical and Electronics Engineering *December 2021 - May 2025*
GPA : 8.70/10
Relevant Coursework: Robot Modelling and Control, Linear Control Theory, Neural Network and its Applications, Statistical Foundation, Digital System Design, Digital Signal Processing, Linear Algebra

EXPERIENCE

Indian Institute of Space Science and Technology **Thiruvananthapuram, India**
Summer Research Intern, IASc Summer Research Fellowship Programme 2024 *May 2024 – July 2024*
- Developed a dynamic object tracking system for a Kinova robotic arm using PPO reinforcement learning in ROS and Gazebo, enabling accurate tracking of moving targets
- Implemented custom ROS nodes for real-time joint velocity control, state observation, and action execution
- Developed a multi part reward function balancing target proximity, goal progress, motion smoothness, energy efficiency, and joint/velocity limits, optimizing the PPO algorithm's learning for efficient and stable control

PROJECTS

Autonomous Navigation of a Differential Drive Robot using DRL *November 2023 – March 2024*
- Built an autonomous navigation system using Deep Deterministic Policy Gradient (DDPG), integrating ROS2 and Gazebo and fusing LIDAR and encoder data for enhanced perception and decision making
- Implemented noise injection and randomized actions near obstacles to improve exploration and avoidance
- Designed a reward function balancing goal, obstacle avoidance, and path efficiency in dynamic settings

Autonomous Mobile Robots for Object Manipulation *September 2023 – July 2024*
- Engineered a four-wheel holonomic robot for ABU Robocon 2024 'Harvest Day' to execute tasks including object pickup, ball kicking, and item sorting from scattered positions
- Designed and integrated a computer vision system to detect and track balls for accurate object handling
- Integrated encoders and IMU for precise navigation, optimizing control for efficient and smooth coordination

Low Light Image Enhancement using MIR Net *October 2022 – March 2023*
- Developed MIR Net for low-light enhancement with multi-scale residual learning and channel attention
- Enhanced model with multi-scale residual learning and attention fusion to boost sharpness and suppress noise
- Refined model by optimizing Residual Blocks and Groups to enhance speed efficiency and feature extraction

SKILLS

Programming Languages: Python (Advanced), C(Intermediate), C++ (Intermediate)
Tools/Software: ROS, ROS2, MATLAB, Simulink, Gazebo, VS Code, Canva, RViz
Libraries: NumPy, Matplotlib, Pandas, OpenCV, sci-kit-learn, Keras
Technologies/Frameworks: Docker, Linux, GitHub, TensorFlow, PyTorch, Arduino, Raspberry Pi

LEADERSHIP

CSD Robocon NITK **Mangalore, India**
Team Vice Captain *July 2024 – April 2025*
- Managed overall team operations for 40+ members, coordinating technical, finance, and media activities while overseeing budgets, sponsorships, and outreach for ABU Robocon International competition readiness

Electronics Team Member *May 2022 – April 2025*
- Designed embedded circuits and PCBs, integrated sensors and actuators, programmed motion planning and control algorithms, and implemented feedback sysrems to ensure precise navigation, object handling, and reliable robot performance in competitions.

CERTIFICATIONS

- Deep Learning for Computer Vision | *NPTEL (IIT Hyderabad)*
- Data Science for Engineers | *NPTEL (IIT Madras)*
- Introduction to Internet of Things | *NPTEL (IIT Kharagpur)*
- ROS For Beginners: Basics, Motion, and OpenCV | *Udemy*