

# Gogulnath Sathish Amuthavalli

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## Professional Summary

MSc Robotics student at the University of Bristol specializing in Sensor fusion, ROS2, and Control theory for autonomous systems. Skilled in designing real-time perception, localization, SLAM and control pipelines. Strong interest in Vision-Language-Action (VLA) and AI-driven robotic autonomy, and seeking a role in robotics research focused on intelligent, perception-driven robotic systems.

Passionate about building reliable intelligent robots for real-world applications.

## Education

- **MSc Robotics**  
University of Bristol, UK  
Sep 2025 – Sep 2026 (Expected)
- **Bachelor of Engineering in Mechatronics**  
Sastra University, India  
Graduated August 2024  
CGPA: 7.02 / 10

## Project

### Stability Enhancement for Leader-Follower by Using Bayesian Filter

- Developed a probabilistic framework to achieve reliable directional stability in an IR Sensor-based leader follower robotic system.
- Focused on making the Leader-Follower robust with Bayesian Filter.

### Robust Apple Detection in Orchard Environment Using Machine Vision and SVM

- Built an image processing pipeline with stages using Support Vector Machine for detecting and counting the apples in Orchard environment.
- Tested mainly on machine-learning method to obtain accurate results.

### Semi-Autonomous Shopping Cart

- Worked in SITL for tracking human movement in department stores.
- Focused on the Sensor integration.

### Implementing VLA in the HITL - Ongoing

- Focusing on the pipeline architecture in VLA.
- Understanding the current challenges in implementing VLA in the robot.
- Working on Reinforcement learning in Nvidia Isaac Sim.
- Exploring Nvidia Newton.

## Certifications

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- Self Driving and ROS-Learn by Doing. Odometry and Control
- Advanced Kalman Filtering and Sensor Fusion
- IELTS Academic Band 6.5

## Skills

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**Analytical & Strategic:** Mathematical and algorithmic reasoning • Hypothesis-driven experimentation • Statistical evaluation of perception and learning models • Optimization and control analysis • Interpreting real-world robotic data under noise and uncertainty • Translating research insights into deployable robotic solutions

**Engineering & Collaboration:** Technical documentation for robotics systems • Coordination across hardware, software workflows • Structured presentation of technical results and experiments • strong ability to analyze complex robotic perception and control systems

**Communication:** Technical documentation | Clear written and verbal communication | IELTS Academic Band 6.5 (B2)