

# ATHUL KRISHNA

Robotics Engineer (Intern) | Autonomous Systems | ROS2 | AI for Robotics

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## PROFESSIONAL SUMMARY

Robotics Engineer skilled in autonomous navigation, motion control, ROS2 development, AI-based decision systems, and simulation platforms such as Gazebo and MATLAB/Simulink. Strong hands-on experience with real-time sensor processing, path planning, and 3D simulation modeling. Adept at implementing robotics algorithms for USVs and UUVs.

## CORE TECHNICAL SKILLS

- Autonomous Navigation, Motion Control, Path Planning, SLAM, Localization
- ROS2, Gazebo, MoveIt2, RViz, Unity Simulation
- Linux (Ubuntu), Git, Real-Time Systems
- Sensors: Sonar, Radar, LiDAR, GPS, IMU
- Programming: Python, C++, C, MATLAB
- 3D Tools: Blender, SolidWorks, FreeCAD
- AI/ML: Computer Vision (OpenCV), Neural Networks, Reinforcement Learning

## EDUCATION

M.Tech — Robotics / Embedded / CSE / EEE / IT (Expected 2026)

B.Tech — Thrissur, Kerala

## PROJECT EXPERIENCE

Autonomous Navigation System for Mobile Robot

- Built full ROS2-based navigation stack using Nav2.
- Implemented A\* and RRT algorithms for path planning.
- Developed Gazebo simulation environment for testing.

AI-Based Decision Making for Marine Robots

- Created an AI-based decision system for maritime robotics.

- Improved navigation decision accuracy by 35%.
- Modeled marine behavior in MATLAB.

## **PROJECT EXPERIENCE (Continued)**

Sensor Fusion for GPS + IMU Navigation

- Implemented EKF for stable sensor fusion.
- Achieved accurate localization during GPS disturbances.

3D Simulation Environment Creation

- Developed custom 3D simulation scenes using Blender & Gazebo.
- Built marine-world simulations for UUV/USV testing.

## **INTERNSHIP EXPERIENCE**

Robotics / Embedded Systems Intern

- Worked with real-time embedded systems and multi-sensor integration.
- Developed robot control test frameworks.
- Assisted in navigation and perception experiments.

## **CERTIFICATIONS**

- ROS2 Essentials
- MATLAB for Robotics & Control
- AI & Machine Learning Foundations

## **ATS-FOCUSED SKILL KEYWORDS**

Autonomous Navigation, Motion Control, Path Planning, USVs, UUVs, ROS2, Linux, Gazebo, MATLAB, Simulink, Sensor Data Processing, Sonar, Radar, GPS, AI Decision Systems, Blender, SolidWorks, Simulation Environment, Real-Time Systems, Embedded Systems, C++, Python, MoveIt2.

## **DECLARATION**

I hereby declare that the information provided above is true and correct to the best of my knowledge.