Abdul Hannan

+91 9035498346 | abdulhannan6590@gmail.com | LinkedIn | Portfolio | GitHub

Professional Summary

Robust Robotics Developer with over 3.5 years of hands-on experience in designing, developing, and deploying robotics solutions. Skilled in Robot Operating System (ROS), Computer Vision, AI/ML workloads and expertise in Functional Safety compliant with ISO26262 and ASPICE process.

Work Experience

3.5+ years

Associate Robotics Developer – Adsafe Solutions Pvt Ltd, Bangalore, IN Sept 2021 – present

- Developed and implemented a **Vision-Guided Navigation system** that enables **real-time path tracking** on streets for **autonomous robots**, successfully tested on robots utilizing the NVIDIA Jetson Orin Nano.
- Migrated entire system from **ROS1 to ROS 2**, improving performance and future scalability.
- Collaborated with cross-functional teams to ensure functional safety compliance by performing hardware and software **FMEA** per **AIAG-VDA** and **ISO 26262** standards.
- Designed and developed 4-DOF and 6-DOF **robotic arm**, focusing on precision, flexibility, and control.
- Led a team in developing a **Control Center Interface** for real-time robot management and operation.
- Performed **FMEDA** (Failure Modes, Effects, and Diagnostic Analysis) to assess and enhance the reliability and diagnostic coverage of safety-critical systems.
- Developed and implemented a **Contactless Navigation system** that guides autonomous robots using **computer vision inputs** for real-time navigation instructions.
- Designed and developed an **autonomous robot** capable of navigating independently.
- Worked on various **sensors, simulations** to analyze and enhance **robot performance** and functionality.

Core Competencies

Robotics: ROS1, ROS 2, Sensor integration, Robot path planning, SLAM, Control systems.

Computer Vision: OpenCV, Image processing, Object detection, 3D reconstruction, Deep learning models.

Programming languages: Python, C++, MATLAB, Bash/Shell.

Functional Safety: ISO26262, FMEA, FMEDA, ASPICE, V-cycle.

AI/ML: TensorFlow, PyTorch, Generative AI.

Tools: Git, GitHub, Docker, Simulink, Gazebo, Altium circuit maker, Enco SOX, Jira, Confluence.

Hardware: Microcontrollers, Sensors, Single Board Computers (SBCs), Soldering, 3D printing, Circuit design.

Education

Bachelor of Engineering in Electrical and Electronics, BNM Institute of technology (2021-2025)

Projects

Smart EV: Developed a smart vehicle controller that adjusts vehicle speed based on obstacle detection.

IoT Data Monitor: Developed a data tracking system with cloud integration for real-time monitoring (IEEE paper).

Certifications

- Computer Vision Essential Training: Deep Learning for Image Classification (link)
- C Programming for Embedded Applications (link)
- Career Essentials in Software Development by Microsoft and LinkedIn (link)
- Agile Software Development (link)