NITHIN RAJAN
Robotics Engineer

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PROFESSIONAL SUMMARY

Robotics Engineer with extensive experience in developing and implementing cutting-edge robotic systems and automation solutions. Skilled in C++, Python, ROS 1/2, and various sensor technologies, with Practical expertise in Simulation, Sensor Calibration, and Real-time data processing. Proven ability in system automation testing, Embedded systems, and Self-driving vehicle technologies. Strong leadership in team management, algorithm optimization, and delivering high-quality project outcomes. Successfully executed complex projects across Automotive, Infotainment, and Educational robotics sectors.

WORK HISTORY

AUTOMATION AND VALIDATION SPECIALIST
TATA ELXSI

2022-07 - Current
Trivandrum, India

- Leading the System Qualification Testing and Automation team, driving efficiency and quality in testing processes.
- Developed comprehensive validation plans, outlining objectives, timelines, and resource requirements for successful project execution.
- Support and Training to the ADAS interns team for the Internals projects, in area of the **ROS1/ROS2** with the **C++ implementation** in the areas of **Localization & Navigation, Robot Arm Manipulation[Move IT], Image Processing** and **Sensor Calibration & Simulation [Gazebo]**.
- Developed **CANoe** configurations and created panels for features and diagnostics in **Ethernet, CAN**, and **LIN** communication in **CANoe 16**.
- Analyzed system and software requirements to develop SYS4 (System Integration Testing) and SYS5 (System Testing) test cases.
- Investigated automation feasibility for test cases related to both features and diagnostics.
- Utilized **CAPL scripting** to automate test cases for features and diagnostics in **CANoe 16** and **VTest Studio**.
- Designed and executed **Hardware In Loop (HIL)** testing using VT cards to simulate the OHC board and capture critical data values.
- Developed diagnostic and feature scripts for **CAN** and Ethernet communication using **Python programming** and **BDD framework**.
- Created comprehensive test plans to guide test execution.
- Monitored the progress of SYS5 test case creation and automation scripting efforts.
- Troubleshot and resolved issues encountered during test execution.
- Reviewed test cases and scripts, ensuring accuracy and updating traceability documentation.
- Assisted in the preparation of regulatory submissions by providing validation-related documentation, contributing to successful approval outcomes.

SENIOR SOFTWARE ENGINEER
DEEVIA SOFTWARE INDIA PVT LTD

2019-05 - 2021-09
Bengaluru, India

- Ported **C implementation** to PP (Pixel Processing) implementation for the Trailer Tracking Test.
- Optimized and tested the Bilinear Interpolation Algorithm in the PP implementation for the Trailer Tracking Test.
- Developed resolutions for different camera views as specified by the Customer.
- Created and tested golden images for various camera views based on updated software requirements from the BMW team (BEGU generation offline tool).
- Integrated and tested software components on the embedded platform.
- Created project release packages, uploaded code for Gerrit review in **GITHUB**, and maintained the project repository.
- Monitored, updated, and resolved bugs reported in **JIRA** tickets.
- Delivered unit-tested systems within customer-prescribed timeframes.
- Collaborated with fellow engineers to evaluate software and hardware interfaces.

SOFTWARE ENGINEER
DEEVIA SOFTWARE INDIA PVT LTD

2018-09 - 2019-05
Bengaluru, India

- Developed a **ROS1 MoveIt model** for the Panda Arm robot, incorporating a custom-made vacuum gripper.
- Optimized trajectory planning within the **OMPL interface**.
- Integrated the **OMPL interface** for a new planner.
- Developed the **C++ implementation** of datalogging for different parameters across various modules for the Rear Camera project

ROBOTIC ENGINEER
ROBOWARE TECHNOLOGIES LLP

2017-12 - 2018-09
Bengaluru, India

- Developed, tested, and optimized existing algorithms using **ROS** for the Wipod, executed on the **Arduino embedded platform**.
- Researched, implemented, and tested the **Navigation, Localization**, and **3D mapping stack** in ROS.
- Delivered demonstrations of the L-3 Wipod vehicle model to customers.
- Programmed **Arduino** for vehicle movement and **LIDAR** actuation.
- Tested and calibrated **LIDAR** and **Laser** sensors for the **Navigation stack in ROS**.

Robotics Engineer
NOVATECH ROBO PVT LIMITED

2015-06 - 2016-12
Bengaluru, India

- Delivered comprehensive training sessions on **fundamentals of electronics, embedded systems (8051)**, and **Arduino programming**, along with simulation tools like **Proteus8** and **MATLAB**.
- Organized and facilitated interactive workshops featuring platforms such as **Novabot, LEGO Mindstorms, 8051 development boards, Arduino**, and **MATLAB**, enhancing technical skills among students and peers.
- Engineered a variety of robotic solutions—including **autonomous mobile robots, robotic arms**, and **drones**—for real-world academic applications.
- Improved robotic system efficiency by designing and implementing hardware upgrades.
- Utilized simulation software to validate proposed solutions before physical implementation, reducing development time and costs.
- Built, configured or tested robots or robotic applications.
- Tested features, documenting findings, modeled trends, and submitted reports.

EDUCATION

Master of Technology: Robotics   **2015-06**
SRM University - Chennai, India

- Completed the post-graduation from SRM University, Chennai with an 8.732/10 CGPA

  Bachelor of Technology: Electrical And Electronics Engineering   **2011-07**
  Calicut University - Thrissur, India

- Completed the Under Graduation from Calicut University with 61% of the aggregate.

SKILLS

- Python
- C
- C++
- CAPL Scripting
- CANoe
- VTest Studio
- ROS1 / ROS2
- JIRA
- Git proficiency
- Linux
- Arduino Programming
- UDS
- CAN
- LIN
- Ethernet

CERTIFICATIONS

- Certifications in ROS1 / ROS2 [Navigation, Manipulation, Localization and Sensor Fusion]- Udemy
- Certifications in C++ - Udemy
- Certifications in Python - Udemy

LANGUAGES

English	Upper intermediate (B2)
Malayalam	Bilingual or Proficient (C2)
Hindi	Intermediate (B1)
Tamil	Intermediate (B1)

PERSONAL DETAILS

Date of Birth:	19/07/1989
Nationality:	Indian
Marital Status:	Married
Visa Status:	Sponsor Visa
Available in UAE from:	Sept-25

DECLARATION

I hereby declare that the above-written particulars are true to the best of my knowledge and brief.

NITHIN RAJAN