Viren Sompura

Robotic Engineer

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OBJECTIVE

Seeking a challenging position as a ROS Engineer or Robotics Software Engineer where I can leverage my expertise in ROS/ROS2, robotics systems, and software development to contribute to innovative robotics solutions.

KEY SKILLS

- ROS/ROS2 Framework, Autonomous Navigation, SLAM, Sensor Integration
- Robot Hardware-Software Integration, Python, C++, Version Control (Git)
- API Integration, Stream lit, Flask Framework
- Linux Systems, Embedded Systems Programming

EDUCATION

M.S. Ramaiah University of Applied Science	2021 – 2023
M.Tech. in Robotics Engineering	*CGPA: 9.0*
Sal College of Engineering	2016 – 2020
B.Tech. in Mechatronics Engineering	*CGPA: 8.02*

PROFESSIONAL EXPERIENCE

Vama Communications Pvt. Ltd. — Sept 2023 – Present
Robotic Engineer — *Ahmedabad, Gujarat*

- Spearheading the development of Curio Robot's hardware and software in the R&D department
- Designed and implemented custom PCB solutions for enhanced robot functionality
- Currently implementing ROS2-based navigation and SLAM on Jetson Nano, improving robot autonomy by 40%
- Developed software modules that reduced system latency by 25% and increased overall robot efficiency

Fenwick and Ravi (F.A.R.) — April 2023 – July 2023
Intern — *Bangalore, Karnataka*

- Developed software for a radio-shuttle system, improving warehouse automation efficiency by 30%
- Created an Autonomous Mobile Robot using ROS2 Framework, implementing custom navigation algorithms

Raicam Automotive Private Limited — September 2020 – March 2021
Trainee Engineer — *Sanand, Ahmedabad*

- Contributed to the production of Clutch Actuation systems, focusing on Clutch Master Cylinder and Concentric Slave Cylinder development
- Implemented process improvements that increased production efficiency by 15%

ROBOTICS PROJECTS

Curio: Museum Guidance Robot
🎥 Video ⛁ Project

- We developed a Guidance Wheel Robot named "CURIO" for guidance at Kolkata Museum, which is using Atmega2560 IC
- User can interact with robot and can ask any science and technology related questions and robot can explain every exhibit of the museum

Humanoid Robot
🎥 Video ⛁ Project

- Along with "CURIO", we also developed a Humanoid Robot that greet and talks to everyone
- Used various sensors which sense the movement of the crowd and greets the visitor of museum

Autonomous Mobile Robot with LiDAR & A* Search Algorithm

⌂ GitHub   ⬙ Project

- Developed an AMR prototype using Raspberry Pi 4 for ROS integration and Arduino Mega for low-level hardware control
- Implemented real-time obstacle mapping and navigation using RPLiDAR A1M8 and A* search algorithm

ROS2 Sensor Integration and Driver Development

⌂ GitHub   ⬙ Project

- Developed and implemented custom ROS2 drivers for advanced sensors, including Qwiic ICM20948 IMU and VL53L0X ToF distance sensor
- Engineered a robust sensor fusion algorithm, significantly enhancing the accuracy and reliability of robot localization and obstacle detection

Automatic Cocoon Sorting Machine

⌂ GitHub   ⬙ Project

- Designed and built a low-cost prototype for sorting male and female cocoons based on weight
- Achieved a sorting rate of 600 cocoons per hour, improving efficiency in silk production

Smart Jacket for Visually Impaired People

⬙ Project

- Created a wearable assistive device using Arduino Mega, ultrasonic sensors, and vibrating motors
- Implemented obstacle detection and distance-based feedback system

TECHNICAL SKILLS

- ROS/ROS2 Framework, Navigation Stack, SLAM, Linux, Docker, Git
- Python, C++, Arduino, Machine Learning and Computer Vision basics, Flask basics, API integration, Streamlit
- Microcontrollers: Arduino, NodeMCU (ESP8266), ESP32
- Single-board computers: Raspberry Pi 4, Jetson Nano
- CAD: SOLIDWORKS, CATIA V5R20, AUTOCAD 2D
- Simulation: Gazebo, Rviz, MSADAMS (introductory), ANSYS (introductory), HYPERMESH (introductory)
- Other: MATLAB and Simulink (beginner), Automation Studio

CERTIFICATIONS AND ADDITIONAL ACTIVITIES

- NPTEL course: "Introduction to Machine Learning" - IIT Madras (November 2022)
- Participated in "Arduino with MATLAB workshop" - GANPAT University
- Volunteered for "MATHO" workshop at Sal College of Engineering