PAVIT SINGH NARANG

ROBOTICS ENGINEER

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Education

B.Tech Nov 2020 - Jun 2024

Electronics and Communication at Acropolis Institute of Technology and Research
(GPA: 8.29/10.0)

Experience

Robotics Engineer Intern, Void Robotics Jan 2024 - Jun 2024

Skills: ROS2, Gazebo Simulators ,RViz ,Ngrok ,Nvidia Jetson Orin ,Python ,C++

- Developed SLAM, ekf.global, ekf.local, and navsat transform systems to optimize odometry visualization in RVIZ; resulted in a 20% improvement in navigation performance.
- Spearheaded Python script on Nvidia Jetson Orin to update ClickUp tasks with Ngrok URLs, saving 10+ hours weekly through improved tunneling and API integration.
- Constructed Dockerfile for Nvidia Jetson Orin, including ZED Camera SDK, ZED components, and ROS2 Humble with l4t 35.4.1 Ros base image, reducing the size by 10%.

AI Intern, AICTE & IBM SkillsBuild Jun 2023 - Jul 2023

Skills: Deep Learning Model ,CNN ,Image Recognition ,Pytorch ,Tensorflow

- Applied TinyVGG and FashionMNISTModelV0 for custom datasets, boosting fashion accessories detection accuracy by 10%.
- Employed torchvision models for tasks like pizza and steak classification, resulting in a 20% reduction in misclassification rates.

EV Engineer Intern, ESLA Transtech Private Limited Aug 2022 - Mar 2023

Skills: CAN Communication ,AUTOSAR ,AIS Rules Study for M4 Category

- Crafted logic diagrams, circuit diagrams, and wiring diagrams, enhancing mission success rates by 15%.
- Implemented CAN Communication for data exchange between ECUs, improving data transmission reliability by 25%.
- Incorporated AUTOSAR for making the application layer for the ECUs, resulting in a 30% increase in system integration efficiency.

Robotics Engineer Intern, APSIS Solutions by InMovidu Apr 2021 - May 2021

Skills: Raspberry Pi ,Arduino ,C++ ,Python

- Engineered 10+ innovative projects utilizing Raspberry Pi and Arduino, using a hands-on project-based learning approach.
- Designed a Health Monitoring System with oxygen, BPM, and ECG measurements, utilizing a LoRa module to transmit data to a Raspberry Pi, increasing coverage area by 20% without internet.

Achievements

- **Second Runner Up** in **Flipkart Grid 5.0 Robotics Challenge** (Project Hackathon) in 2023.
- **Winner of IOT Competition 2023** in which **100 Students** participated, organized by Acropolis Institute of Technology and Research.

Skills

Experienced:	ROS2, C++ ,Linux ,Python ,RViz ,Gazebo Simulator ,CAN ,SPI & I2C
Intermediate:	MoveIt ,SLAM ,Machine Learning ,Deep Learning ,Git ,Github ,Pytorch ,PLC
Hardware:	Raspberry Pi ,Arduino ,Nvidia Jetson Orin
PLC Software:	Simantic S7 Step7,Mitsubishi FX-TRN-BEG-E ,RSLogix500
Designing:	Solidworks ,Creo Parametric ,Fusion 360
Familiar:	MongoDB ,Express.js ,React.js ,Node.js

Projects

Object Size Detection Jun 2024 - Jun 2024

Domain: Automation ,**Technology:** Mitsubishi FX , Simatic S7 , PLC

- Developed a box size identification system using sensors to detect height on a conveyor belt and activate lamps for size classification, improving efficiency by 35%.

Military Robotic Arm Mar 2024 - Present

Domain: Robotics ,**Technology:** Solidworks, Gazebo Simulator , ROS2

- Designing a cutting-edge Autonomous Combat Arm with a precision rifle and Advanced Computer Vision, aiming to improve target accuracy by 40%.

Autonomous Vehicle Dec 2023 - Present

Domain: Robotics ,**Technology:** Solidworks, Gazebo Simulator, Computer Vision

- Employs sensors, including Lidar, for obstacle and human detection on a predetermined route, improving detection efficiency by 20% based on real-time data.

Singulation Automation Machine (SAM) Aug 2023 - Jan 2024

Domain: Robotics ,**Technology:** Creo, Python , Mqtt , Raspberry Pi

- An ingenious box-picking automation machine utilizing singulation techniques for the Flipkart Grid 5.0 Robotics Challenge, advancing to the final round.

C.H.A.R.M Jul 2023 - Mar 2024

Domain: Robotics ,**Technology:** Creo , Python , ML , NLP , Raspberry Pi

- A sophisticated humanoid robot featuring hardware-based artificial intelligence, integrating an NLP-based chatbot for enhanced interaction, increasing user engagement by 30%.

Traffic Robot Jan 2023 - Feb 2023

Domain: Robotics ,**Technology:** Arduino , ESP32

- An Automated traffic regulation robot deployed for Madhya Pradesh Police for managing local traffic, improving traffic flow efficiency by 20%.

Certificate

Flipkart Grid 5.0 Robotics Challenge Finalist Certificate
Robotics Internship Training Certificate by APSIS Solutions
Sensors Study Certificate by University of Colorado