Manu Tyagi

Bachelor of Technology
Automation and Robotics
Guru Gobind Singh Indraprastha University EDC Delhi

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LinkedIn Profile

Automation and Robotics engineer with hands-on experience in developing AI-driven systems, industrial automation solutions, and embedded applications. Proven expertise in leveraging tools like ROS 2, OpenCV, and CNC programming to solve complex engineering challenges. Strong academic foundation with a consistent record of excellence in technical projects and certifications.

Education

- **Bachelor of Technology in Automation and Robotics** *2021-25*
UNIVERSITY SCHOOL OF AUTOMATION AND ROBOTICS Surajmal Vihar New Delhi   CGPA: 8.5

- **Intermediate** *Year: 2020*
Ramakrishna Senior Secondary School, Vikaspuri, New Delhi   Percentage: 95 %

- **High School** *Year: 2018*
Ramakrishna Senior Secondary School, Vikaspuri, New Delhi   Percentage: 90 %

PERSONAL PROJECTS

- **Automated Guided Surveillance Vehicle Prototype**
Designed and developed a surveillance AGV prototype enabling autonomous navigation using ROS & SLAM navigation and Arduino components. Improved navigation accuracy by 15% through iterative testing and sensor calibration.

- **Football Analysis System using AI/ML OpenCV, YOLO and Python**

Developed an AI-based system for football game analysis using OpenCV and YOLO for precise object detection. Utilized KMeans clustering to assess player improvement, enhancing data driven game strategies. GitHub

- **Constitutional AI Agent**
Created an Ai driven platform to provide constitutional insights to user through use of semantic embeddings and vector database and integrated it with an intuitive interface using Streamlit. Project Link

- **Simulation Projects on Edsim 51 for 8051 microcontroller**
Created Implemented projects like addition, subtraction, and sine wave generation on EdSim51 simulator. Enhanced microcontroller understanding for embedded systems. Project link

EXPERIENCE

- **Industrial Training on Automation and CNC Programming at Siemens Centre of Excellence, Punjab Engineering College, Chandigarh** Aug 2023 - Sep 2023

Acquired a comprehensive understanding of automation technology through hands-on industrial training. Engaged with multiple facets of CNC and PLC, honing skills for modern manufacturing environments. Developed insights into cutting-edge manufacturing processes and automation advancements.

- **Industrial Training in Assembly Frame Department at Honda Cars India Ltd., Tapukara Plant, Rajasthan** Jul 2024 - Aug 2024

Acquired practical experience in key automobile manufacturing processes, such as Assembly Frame, Press Shop, Welding, Paint Shop, Bumper Painting, and Engine Assembly. Worked alongside industry experts, applying engineering concepts to real-world challenges, and improving skills in precision, teamwork, and problem-solving.

TECHNICAL SKILLS & INTERESTS

Languages: C/C++, Python
Libraries: C++ STL, Python Libraries, ASP.NET
Cloud/Databases: Oracle DB, My SQL
Tools: MATLAB, Coppelia Sim, Gazebo, AutoCAD, CREO, Solidworks
Specialized Areas: Robotics, Industrial Automation, Automobile engineering CNC programming , MATLAB Coppelia Sim, Gazebo, Prolog Programming, ROS 2, Auto Cad & CREO ,Open CV,YOLO , Microcontroller
Areas of Interest: AI and Machine learning, Neural Network , Deep Learning

COURSES AND CERTIFICATION

- **NPTEL SWAYAM COURSES IN ENGINEERING DISCIPLINE**
Successfully completed NPTEL open electives engineering courses ranging from 8 weeks to 12 weeks in various courses like Generative AI,Artificial Intelligence using Prolog Programming , Applied Accelerated Artificial Intelligence , Machine Learning and Deep Learning - Fundamentals and Applications, Embedded System and Actuation from universities like IIT Guwahati , IIT Pallakad through NPTEL SWAYAM Portal.

- **AWS SOLUTIONS ARCHITECTURE**
Job Simulation certificate issued by Forage showcasing AWS Solutions Architecture intended for scalable hosting architecture based on Elastic Beanstalk for a client experiencing significant growth and slow response times.

- **ORACLE DEV GYM: Databases for Developers Foundations**
Oracle Database Fundamentals certificate awarded by Oracle Dev Gym showcasing learning and proficiency in oracle database operations through completion of a 12 part boot camp .

EVENTS AND OTHERS

- **E-Yantra Robotics Competition by IIT Bombay**
Constructed an autonomous delivery robot for the E-Yantra Robotics Competition, proficient in collecting medicines from pharmacies and delivering them efficiently. Implemented advanced line following techniques and utilized LUA programming for robotic simulation.

- **Research Paper on Optimizing Compilation Speed in Python**
Collaboratively authored a research paper analyzing various techniques aimed at optimizing the compilation speed of Python, and enhancing performance using machine learning algorithms and associated libraries.