Ashish Ranjan

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Welcome To MyCV!

Highly motivated and skilled college student with extensive experience in **Python programming, ROS2 Humble, and web development.** Proficient in utilizing various libraries and frameworks to create innovative solutions. Demonstrated ability to work on complex projects, with a keen interest in **IoT and AI/ML**. Known for attention to detail, problem-solving skills, and the ability to learn and adapt quickly.

Education

The Chandrasheel School Chakia, Primary , Secondary and Higher secondary education — 2010 to 2022

NIT HAMIRPUR, BTech - Mech. Engineering — 2023 to 2027

Technical Skills

Python Programming : can work with Python and its Libraries

- Numpy
- Pandas
- MatplotLib

Robot Operating System (ROS)

Computer Aided Design (Onshape)

Frontend - Development

- HTML
- CSS
- JavaScript
- GSAP

Projects

ROS2 - TurtleSim Project This project demonstrates a simple ROS2 application using the TurtleSim package. In this project, two turtles are spawned. One turtle is controlled by keyboard teleop key , and the other turtle follows the first one.

- Used ROS2 Nodes , Topics , ROS2 Services , TurtleSim Teleoperation.
- Github Repo Link

ROS2 - TurtleSim-Joystick Project This project shows a simple application of ROS2 using the TurtleSim. In this project, I controlled a turtle using a joystick connected to an Arduino Uno. The joystick inputs are read using pyserial and sent to ROS2 to control the turtle's movement.

- Used ROS2 Nodes, ROS2 Topics, TurtleSim, Teleoperation Serial Communication , Pyserial
- Github Repo Link

ROS2 - Joystick-Controlled Bot in a Simulated Gazebo World This project involves creating a robot in a custom Gazebo world and controlling it using a joystick. The goal is to gain hands-on experience with robot modeling, simulation, and real-time control in ROS2 Humble.

- What I Learnt : Robot Modeling using URDF/Xacro files, Gazebo Simulation, ROS2 Communication, Sensor Integration,

Joystick Control

- Github Repo Link

My Portfolio Website This site showcases my skills, projects, and experiences in web development, robotics, IoT, and AI/ML. Built using HTML, CSS, and JavaScript, it features a clean, modern design with a dark theme for a sleek user experience.

- What I Learnt : Html , CSS , Javascript , GSAP , Using APIs
- Github Repo Link
- My Website

Boston Dynamics UI Clone This project is a UI clone of the Boston Dynamics website, designed to replicate the layout and aesthetics using HTML, CSS, and JavaScript. The clone aims to demonstrate modern web development techniques, including responsive design, animations, and interactive elements.

- What I Learnt : Html , CSS , Javascript , GSAP , Using APIs
- Github Repo Link
- Website Link

Robotics - Documentation Website It is a collection of documentation for various electronic components and modules used in IoT and robotics projects. This documentation provides detailed guides and explanations for components like motor drivers, Arduino, sensors, and more. It serves as a comprehensive resource for beginners and professionals working on electronic projects.

- What I Learnt
  - Learned how to create detailed technical documentatio
  - This project improved my skills in organizing content, writing clear and concise guides,
  - Gained deeper understanding of the components I documented
- Github Repo Link
- Website Link

Flask WebApp – TaskManager This is a simple Task Manager web application built using Python and Flask. The app allows users to add tasks, delete tasks, and set deadlines for each task and sends notifications for reminding. The goal of this project is to provide a basic yet functional task management tool while offering a learning experience in web development using Flask.

- Developed an Obstacle Avoidance bot using ultrasonic Sensor
- I learned
  - Flask Basics: I gained hands-on experience with Flask, understanding its routing system, template rendering, and how to handle HTTP requests.
  - Database Integration: I learned how to integrate an SQLite database with a Flask application, including how to create models, perform CRUD operations, and manage migrations.
  - Web Forms: I learned how to work with forms in Flask, including data validation, handling form submissions, and managing user inputs effectively.
  - Project Structure: This project helped me understand how to organize a Flask project, including separating templates, static files, and application logic.
- I gained experience in controlling DC motors through a motor driver and writing Arduino code

Drone Robotics Society , NIT Hamirpur

- Developed a drone using SpeedyBee Flight Controller
- Learn Physics of Working on Drone
- Learn to Use FlySky FS-I6B

Obstacle Avoidance Bot Robotics Workshop, Robosoc NITH

- Developed an Obstacle Avoidance bot using ultrasonic Sensor
- I learned the basics of robotics, including how to interface sensors like ultrasonic

sensors with Arduino to detect obstacles
- I gained experience in controlling DC motors through a motor driver and writing Arduino code

Technologies

Programming Languages

- Python
- JavaScript
- HTML/CSS

Web Development

- Flask
- HTML/CSS/JavaScript/GSAP

IoT and Embedded Systems

- Arduino
- ESP32
- Serial Communication (Python)

Robotics and Simulation

- ROS2 Humble
- Gazebo
- SLAM (Simultaneous Localization and Mapping)
- TurtleBot3 Navigation

Machine Learning/AI

- NumPy
- Pandas
- MatplotLib
- Basic ML Concepts (Learning)

Version Control

- Git/GitHub