
Asansol Engineering College

# The Project on

# Human Following Robot

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# Introduction

## Background on the Human Following Robot

Introducing the concept of a human following robot and its potential applications in various fields to the students and faculty members of the college's robotics and engineering department.

# Objectives of the Presentation

- Introduce the concept of a human following robot Provide an overview of the technology and its potential applications .
- Outline the goals of the presentation Explain what the audience can expect to learn and take away from the presentation.

# Components of the Human Following robot

To describe the various parts of the robot and how they work together.

**Ultrasonic sensors, Infrared sensors, LIDAR sensors**

Collects data about the surroundings and detects humans

**Arduino UNO**

Processes sensor data and controls robot movements

**L293D Motor Driver**

Controls the speed and direction of robot motors

# Components of the robot

To describe the various parts of the robot and how they work together.

**DC Geared Motors**

Drives the robot wheels and enables movement

**11.1V 2200mAh Lithium Polymer Battery**

Power source for the robot

**Servo Motor**

rotator part of a machine

# Overview on Components

## Ultrasonic sensor

An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves. An ultrasonic sensor uses a transducer to send and receive ultrasonic pulses that relay back information about an object's proximity.

# Overview on Components

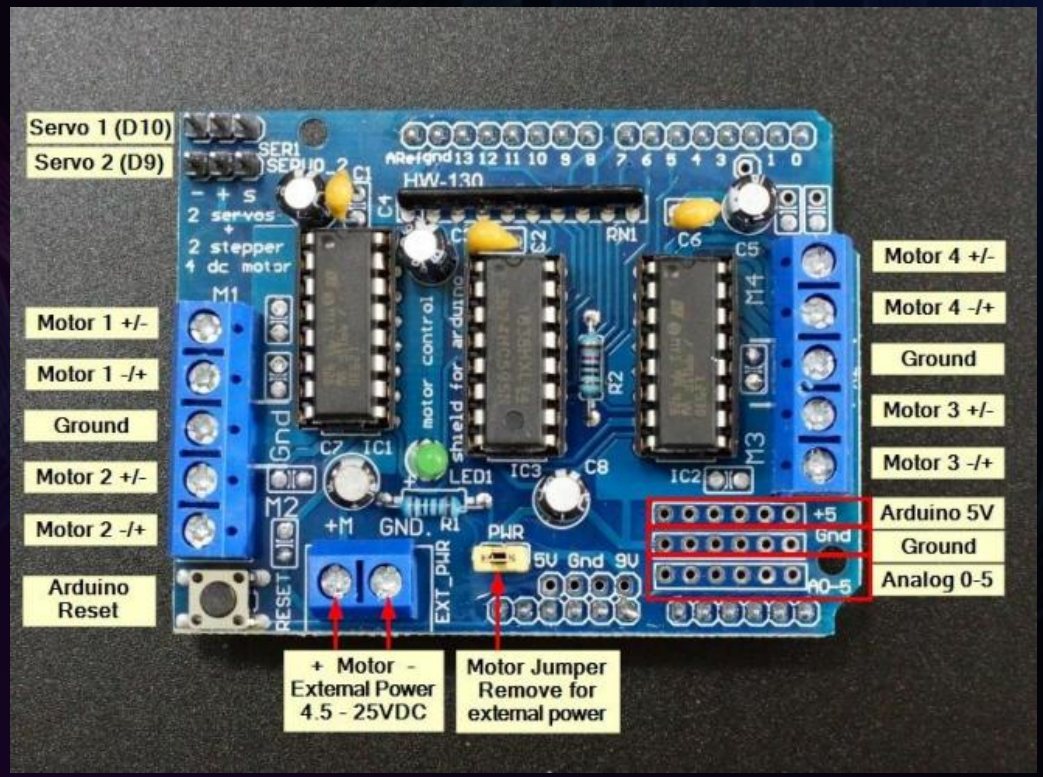
## Arduino UNO

Arduino UNO is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button.

# Overview on Components

## L293D Motor Driver

The L293D is designed to provide bidirectional drive currents of up to 600-mA at voltages from 4.5 V to 36 V. Both devices are designed to drive inductive loads such as relays, solenoids, DC and bipolar stepping motors, as well as other high-current/high-voltage loads in positive-supply applications.



# Overview on Components

## DC Geared Motor

A Gear motor is an all-in-one combination of a motor and gearbox. The addition of a gearbox to a motor reduces the speed while increasing the torque output. The most important parameters in regard to gear motors are speed (rpm), torque (lb-in) and efficiency (%).

# Overview on Components

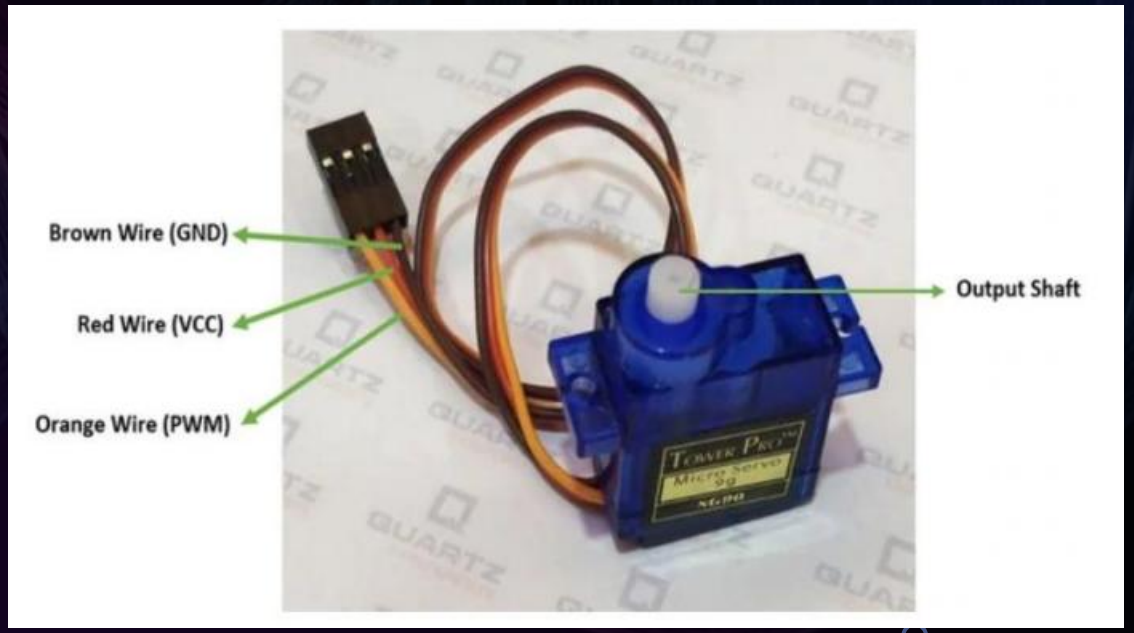
## Battery

11.1V 2200mAH Lipo battery is Capable of maximum continuous discharge rates up to 25C, placing this battery among the most powerful Li-Po battery packs in its class! It offers an excellent blend of weight, power and performance. Charge Capacity( C ) : 2200mAh.

# Overview on Components

## Servo Motor

A servo motor is a self-contained electrical device, that rotate parts of a machine with high efficiency and with great precision. The output shaft of this motor can be moved to a particular angle, position and velocity that a regular motor does not have.



# Potential Uses in Various Industries

Human Following Robot for College Project

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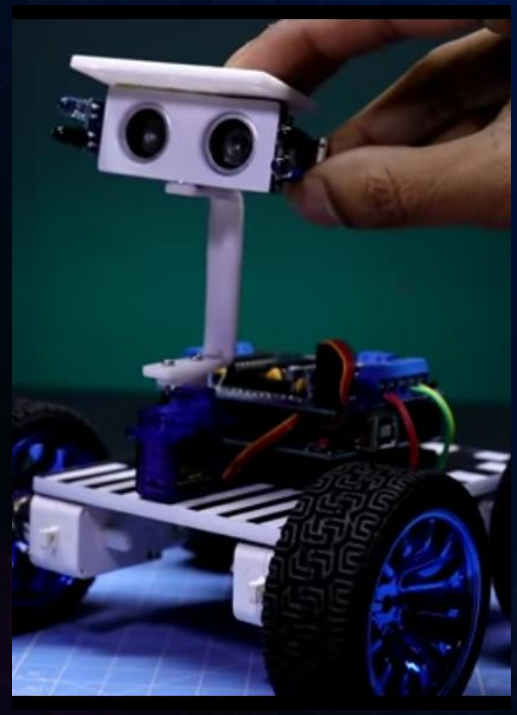
| **Healthcare** | **Assist healthcare professionals in monitoring and caring for patients** |
| **Manufacturing** | Assist in the production process by transporting materials and tools |
| **Education** | Assist teachers and students in navigating school campuses and carrying equipment |



# Applications

- One of the main benefits of human following robots is their ability to assist people with physical disabilities. For example, a robot could help a person with limited mobility by carrying groceries or other items. This would allow the person to maintain their independence and improve their quality of life.

- Human following robots can also be used in industrial settings to increase efficiency and safety. For example, a robot could follow a worker around a factory floor, carrying tools and equipment. This would reduce the need for workers to constantly retrieve and transport items, freeing up time for more important tasks.

# Future of Human Following Robots

As technology continues to advance, the future of human following robots looks bright. These robots will become more intelligent and adaptable, able to perform complex tasks and interact with humans in more natural ways.

In the near future, we may see human following robots used in a wide range of settings, from homes and offices to public spaces and transportation systems. They could even be used to assist emergency responders in disaster situations, helping to locate and rescue survivors.

# Conclusion

Human following robots are an exciting new development in the world of robotics and artificial intelligence. They have the potential to revolutionize the way we live and work, providing assistance and support in a wide range of settings.

However, as with any new technology, there are challenges and ethical considerations that must be addressed. By working together to design and use these robots responsibly, we can ensure that they have a positive impact on society and help us create a better future for all.

# Thank you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