

## ARDUINO BASED SEED SOWING ROBOT

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**Abstract** : This report presents the development of a Arduino Based Seed Sowing Robot. Agriculture is the backbone of Indian economy. About to third of the total population of India has chosen agriculture as their chief occupation. The states like Maharashtra, Punjab, and Kerala, Assam, Uttar Pradesh are highly involved in agriculture. It all started due to the impact of, “Green Revolution” by means of which farmers came to know about the various techniques involved in farming and the advantages in it. As centuries passed, certain modern techniques were invented in agriculture due to the progress in science. With the help of modernization farmers were able to produce better crop. Nowadays we see Robots as an integral part of every organization. They help in reducing the human load. Human work generally involves errors but the electronic work is done with great precision. Hence in this work of project we decided to design a better mechanical machine which is available to the farmers at a cheaper rate and also which can sow and seed the crop at the same time. This project consists of the better design of the machine which can be used specifically for sowing of soybean, maize, pigeon pea, Bengal gram, groundnut etc. For various agricultural implements and non-availability of sufficient farm labor, various models of seed sowing implements becoming popular in dry land regions of India.

**Index terms** – *Arduino, Seed Sowing, Robot, Agriculture, Automation, Precision Farming*

### INTRODUCTION

In sowing machine design, factors affecting seed emergence, some mechanisms. The basic objective of sowing operation is to put the seed and fertilizer in rows at desired depth and seed to seed spacing, cover the seeds with soil and provide proper compaction over the seed. From this we know that mechanical factors effects on seed germination like uniformity of depth of placement of seed, uniformity of distribution of seed along rows.

In this power transmission mechanism, seed meter mechanisms, plunger mechanism etc. mechanisms” are used. The working as machine is pushed; power wheel is rotating which transmit power to plunger through chain and sprocket mechanism. From this we get idea that if we use the belt having small holes with defined thickness then it is beneficial for or project.

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## LITERATURE SURVEY

### ARDUINO BASED SEED SOWING ROBOT seed

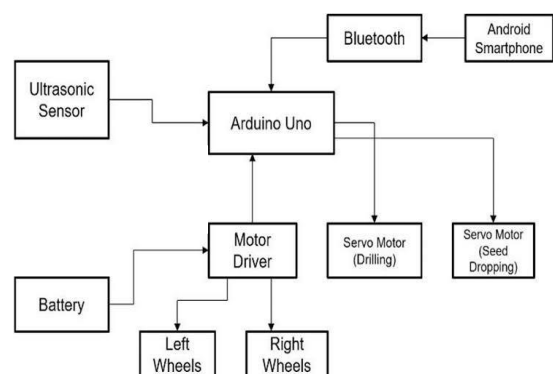
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## METHODOLOGY

The design and development of the Arduino-based seed sowing robot integrates various hardware components to achieve full automation for seed planting in agricultural fields. The key tasks for the robot include mobility for navigating the area, accurate seed dispensing at consistent depths and intervals, and obstacle detection for smooth navigation. Additionally, the system involves programming the Arduino microcontroller to control these components autonomously. This methodology outlines the steps involved in the design, hardware selection, programming, and testing of the robot to accomplish these tasks.

## BLOCK DIAGRAM



## RESOURCES USED

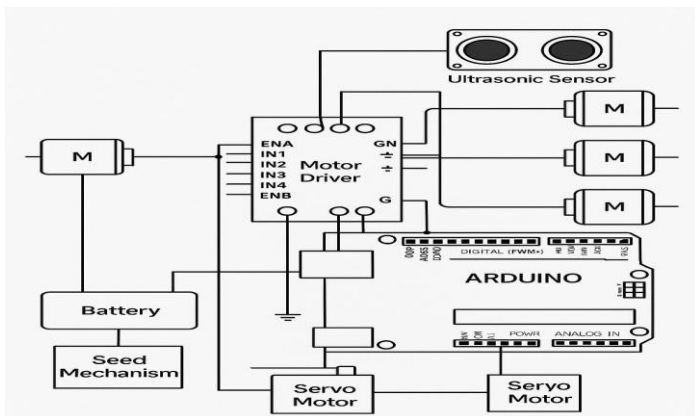
The materials involved in the smart shopping cart system involve the following electronics components:

1. Arduino UNO
2. Motor Driver L293D 3.  
DC Motor
4. Servo Motor
5. Seed Dispenser 6.
- Ultrasonic Sensor 7.
- Water Pump
8. 12v Battery

## REFERENCE

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## CIRCUIT DIAGRAM



## CONCLUSION

This paper presents an effective Arduino-based seed-sowing robot that can help automate seed planting in small-scale farms. The robot offers a low-cost and accurate solution compared to manual labor. Future improvements could focus on making the seed dispenser more reliable in different soil conditions and enhancing the robot's navigation for larger fields.