

Automatic Poultry Farming System Using IoT

F. J. Sayyad¹; Borate Prathamesh Rajendra²;
Chorge Mahesh Santosh³; Rupnawar Harshad Dattatray⁴

¹Assistant Professor
S. B. Patil College of Engineering

^{2,3,4} Department of Electrical Engineering
Savitribai Phule Pune University

Publication Date: 2025/10/16

Abstract: This project is about creating an automatic poultry farming system using IoT (Internet of Things). The system helps to feed grains to the birds and clean the floor without needing much human work. It uses sensors and small electronic devices to check when the birds need food and automatically gives them the right amount of grains. It also has a cleaning system that keeps the floor clean by removing waste and dirt at regular times or when needed. The whole system can be watched and controlled using a mobile phone or computer. This helps farmers save time, reduce labor, and keep the birds healthy in a clean environment.

The customer can lead the poultry more speedier and more effectual. It is composed of automated devices like, Breadboards, timer Modules, Arduino, sungear mechanism and loadcells to deliver food to the poultry. The automatic Poultry management system is more effectual than physical process of poultry feeding. Thus, reduce the feeding time and maintain the poultry and makes the poultry production better. The creation of an automated system for managing poultry can be highly beneficial for the expansion of the poultry sector.

Keywords: Sungear, Poultry, Automation, Arduino, Timer Module, and Load Cell.

How to Cite: F. J. Sayyad; Borate Prathamesh Rajendra; Chorge Mahesh Santosh; Rupnawar Harshad Dattatray (2025) Automatic Poultry Farming System Using IoT. *International Journal of Innovative Science and Research Technology*, 10(10), 888-890. <https://doi.org/10.38124/ijisrt/25oct309>

I. INTRODUCTION

Raising of domesticated birds like ducks, chickens turkeys, and geese for meat or eggs for food is termed as poultry farming. The construction of chicken feeding machine, water feeder, and maintaining hygiene is very useful for the growth of the poultry industry. These manual processes are done in normal poultry farms. Smart poultry farms are introduced to replace these manual activities and making the work in poultry easier. Smart system are introduced for the construction of a smart poultry farm. Billions of chickens are uplifted yearly for food, that is meat and eggs. Industrial hens typically begin birth eggs at 16-20 weeks. These chickens are raised for the food purpose. Feeding of food and water and maintaining hygiene of the farm, all are done manually. Using this model of prototype human work will be less and smart work will be carried out.

In India one of the most important growing economic agricultural sector is poultry. Currently, because of normalized farming management and good manufacturing practices, production of chickens are rapidly increasing.

With the help of IoT (Internet of Things), we can make poultry farming smarter and easier. IoT allows machines and sensors to work together and do tasks automatically without much human effort.

In this project, we focus on two main tasks:

- Cleaning the floor using a smart system that detects dirt or waste and cleans it.
- Feeding the birds using an automatic feeder that gives the right amount of grains at the right time.

This smart system helps farmers save time, reduce labor, and keep the birds healthy. It can also be controlled or monitored using a mobile phone or computer, making poultry farming more modern and efficient.

II. LITERATURE SURVEY

- This focuses on gathering, storing, and managing the information of the chicken farm in order to deliver meals that are both high quality and plentiful. This system was created to address a number of issues in poultry farms,

including the necessity for numerous human workers to manage the farm, high maintenance costs, and erroneous data collected at one time. The suggested methodology significantly aids in completing this assignment within the allotted time. A technology-based approach is suggested for the management of chicken farming that is low cost, asset conserving, quality-oriented, and productive.

- This study demonstrates the use of sensors in the regulation of temperature, water level, smoke, gas, and food distribution. The Raspberry Pi, which can operate all of these sensors and track all data, is connected to all of them. A webpage is maintained with a full record of the poultry farm and the status of the environmental conditions, and the data is transmitted via GPRS.
- The automation of poultry farms utilising wireless sensor networks and mobile communication systems is the main topic of the paper. This paper also focuses on autonomously monitored and managed environmental elements like temperature, humidity, and ammonia gas.
- People don't have as much time to handle tasks, thus automation is a quick technique to handle any equipment or gadget that will perform as we want. is a project that attempts to create and develop home automation using an Arduino and a Bluetooth module. With an Android app, the home automation system offers a user-friendly and dependable technology. A home automation system employing an Arduino Uno and Bluetooth module may manage household equipment including fans, bulbs, air conditioners, and automated door locks. The article primarily focuses on the monitoring and management of smart homes by Android phones and offers a security-based smart home, when people are not at home. The goal of this article is to control home appliances in smart homes with user-friendly, affordable, and straightforward installation design.
- The paper focuses on the automation of chicken farms utilising Internet of Things technologies to carry out numerous management-related tasks. The management of manual tasks such as food feeding, water supply systems, and cleaning is done while also keeping an eye on environmental conditions that have an impact on the health of chickens, such as temperature, humidity, light, and ammonia gas. Maintaining these conditions will boost chicken production and quality.
- Smart Poultry Feeder Using IoT (2021) In this project, the researchers made an automatic feeder for chickens. It

uses sensors to check when food is low and then fills the feeding tray. The system is controlled using a mobile app.

- IoT-Based Poultry Monitoring System (2020). This system checks the temperature, humidity, and food level in the poultry house. If anything is wrong, it sends a message to the farmer's phone.
- AI-Based Poultry Waste Cleaning Robot (2023) A robot was built to find and remove bird waste using a camera and sensors. It moves by itself and cleans only the dirty parts of the floor.

III. METHODOLOGY

Poultry has been a fundamental component of farming system in India. It is necessary to build a smart poultry system in this modern world.

The project focuses on the automation of poultry farming system using IoT techniques to perform various things. The automatic smart poultry system consists of three sections namely the Floor cleaning section Waste collection section, Food feeding section. Through this project work, an approach is being worked out to model a prototype.

A. Floor Cleaning and Waste Collection section:

In addition to being essential for environmental management, litter control is also essential for the health, performance, and final carcass quality of chickens. The chicken will get sores on its knee bones if the litter is excessively hard. The chicken will suffer foot lesions if the litter is allowed to become damp. To overcome this, we developed a system that consists of fine brushes that move from one end on a timely basis. In this way, any litter (like fecal matters of chicken, rice hills, shredded paper, sawdust, etc) in the way of the brush is pushed towards the waste collection system. poultry system to another end of the system in a timely basis. In this way, any litter (like fecal matters of chicken, rice hills, shredded paper, sawdust, etc.) in the way of the brush is pushed towards the waste collection system.

When time is set and the hat goes off, the "Arduino Uno" will send a signal to motor, and the motor in turn will move fine brushes along the length of the poultry system. By this all-litter present is collected inside a waste collecting system.

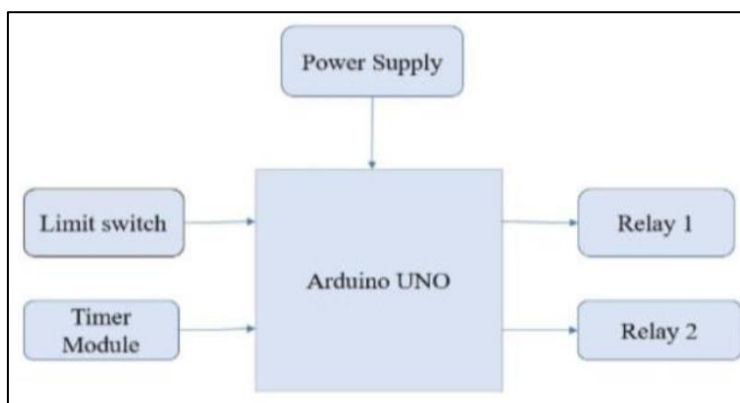


Fig 1: Block Diagram of Floor Cleaning and Waste Collection Section

B. Food Feeding Section:

People were used to physically filling containers with grains and other items to feed chickens before the invention of automatic feeder technology. The primary issue with this approach is the breeders' constant desire to offer food and their constant awareness of the food still there in the cages. This is a lot of wastage of food in this method. To overcome this, we are designing a system that senses the weight of the feeder using a load cell. The A load cell is a gadget that transforms a force into a "electrical signal" that electrical signal is sent to "Arduino Uno" & if the weight of food is above the maximum level, then the flow of food from the

hopper to the feeder is stopped. If the weight of food is below minimum level then the flow of food is continued to feeder by a hopper. This opening & closing of hopper value is by the action of the DC motor connected to Arduino Uno through the "motor shield".

➤ Load Cell

Monitors mechanical force, mostly the weight of things. Here it measures the weight of the food tray and send signal to Arduino. Arduino send the signal to servo motor and it actuates the servo motor which is fitted at the tip of food hopper.

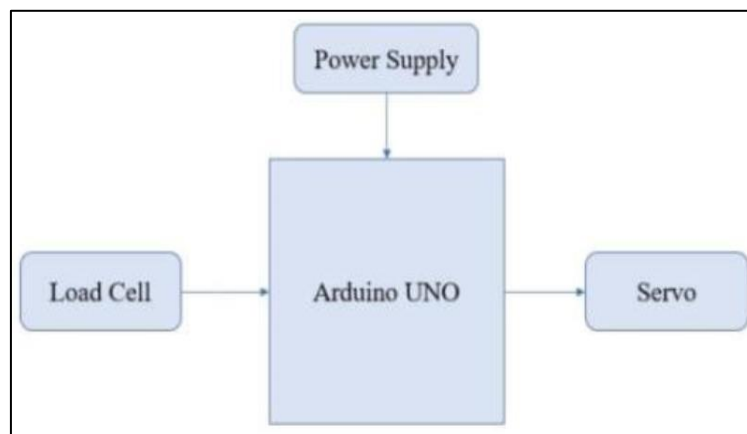


Fig. 2: Block Diagram of Food Feeding Section

IV. CONCLUSION

This method transforms conventional farms into intelligent farms. It increases production efficiency and reduces labor and maintenance costs. The smart monitoring of different parameter consists of food feeding, waste cleaning and collection. Production and health of the product increases. All above parameters are automatically controlled using IoT. In the future, we can add a fire alarm system, build an automated fire extinguisher system, and update the website with additional information about the poultry farm, such as reminders for bird vaccinations, worker information, etc. The same technique can be used for both food preservation and poly houses.

REFERENCES

- [1]. Archana M P1, Uma S K2, "Monitoring and controlling of poultry farm using IOT", International Conference on Computer & Communication Engineering, May 2016.
- [2]. Geetanjali A. Choukidar, Prof. N.A. Dawande, Smart poultry farm automation and monitoring system, IEEE, June 2017.
- [3]. Raghudathesh G P1, Deepak D J2 "IOT based intelligent poultry management system using Linux embedded system", IEEE, Aug 2017.
- [4]. Research paper on Bluetooth-based Home Automation using Arduino Mr. Vaibhav Malav1, Mr. Raushan Kumar Bhagat2, Mr. Rahul Saini 3, Mr. Udit Mamodiya4.
- [5]. Kadam Anaji Sitaram, IoT Based Smart Management of Poultry Farm and Electricity Generation, IEEE, June 2018.
- [6]. Danar Wicaksono, Ratna Mayasari, "Design and Analysis Automatic Temperature control in the Broiler poultry farm based on wireless sensor network", 2nd International Conferences on Information Technology, Information Systems and Electrical Engineering (ICITISEE), Nov 2017.
- [7]. Raghudathesh G P1, Deepak D J2 "IoT based intelligent poultry management system using Linux embedded system", IEEE, Aug 2017.
- [8]. N.David, A.Chima, A.Ugochukwu and E.Obinna," Design of a home automation system using Arduino", International Journal of Scientific & Engineering Research, Vol. 6, pp. 795-801, June-2015.
- [9]. Electric Control Equipment Based on Arduino Relay IOP Conf. Series: Journal of Physics: Conf. Series 1244 (2019) 012028. To cite this article: Yunus Tjandi and Syarifuddin Kasim 2019 J. Phys.: Conf. Ser. 1244 012028.