DESIGNING SMART SCARECROW USING IOT

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***Abstract* - The project Smart scarecrow (Bujgavane) is an IOT based device. In this Project using the mobile app which would turn the way of agriculture production by not only enhancing it but making it efficient, users friendly and safe. The objective of this project is to propose smart scarecrow(Bujgavane) in the agricultural fields which will enable to save the crops from the birds, also getting live data (temperature, soil moisture) for efficient environment monitoring which will enable them to increase their overall yield and quality of products and also handle the agricultural equipment (motor, sprinklers, sound making buzzers) through mobile app by one click .The project is also integrated with technology mixed with different sensors module producing live data on users mobile screen.**

***Key Words*: Internet of Things, Agriculture.**

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INTRODUCTION

Monitoring systems are used in the field to collect the information on farming conditions (e.g., light intensity, humidity, and Temperature) with the aim of enhancing crop productivity. Internet of things (IOT) technology is a recent trend in Numerous fields. Including monitoring system for agricultural farming, farmers need manual labor to handle crops and livestock, obtain leading to inefficient resource use. The down side can be addressed through the concept of Smart farming whereby farmers receive training in the use of IOT, access to the global positioning system (GPS) and data management capabilities to increase the quantity and quality of their products. A scarecrow is a decoy or mannequin, often in the shape of a human. Humanoid scarecrows are usually dressed in old clothes and placed in open fields to discourage birds from disturbing and feeding on recently cast seed and growing crops. Scarecrows are used across the world by farmers, and are a notable symbol of farms and the countryside in popular culture. Scarecrow, device posted on cultivated ground to deter birds or other animals from eating or otherwise disturbing seeds, shoots, and fruit; its name derives from its use against the crow. The scarecrow of popular tradition is a mannequin stuffed with straw; free-hanging, often reflective parts movable by the wind are commonly attached to increase effectiveness. Farming contributes a major income to the Malaysian economy. It is a huge concern to farmers when they are away from their crops and exposing it to crops' threat such as crow damaging the crops and theft. Farming has contributed to nearly up to 22% of a country's Gross Domestic Product (GDP) and due to this fact, countries are trying to their best to keep the industry safe. Due to that cause, countries has been spending billions in order to safe keep their farms and in the long run, this is a heavy blow towards the country itself. As the implementation of IoT in lifestyle has been progressing rapidly, the same goes for agriculture. Though IoT consists of connecting a series of devices into a network which could be controlled through the internet, connectivity is poor in farms as they are located in the rural areas. Professionally, there are the various things to consider before implementing IoT into agriculture. The requirements to consider when implementing are; Robust model, scalability, affordability and sustainability. The agricultural production plays a major role in today's economy. In a research done in California, growers reported that an average of $24 per acre is spent to reduce damage by 50% within their orchards. After comparing Scare Duino with the current technology, we have determined a few advantages and disadvantages of our current implementation. First and foremost, WiFi connection is being chosen to be part of our implementation to connect the mobile phone and the system.

WiFi offers greater mobility as the user can monitor ScareDuino with the availability of an internet connection. A farmer may focus on other daily jobs and leave crop caring to ScareDuino. The machine is programmed to be able to automatically detect particular activity in their vicinity, such as the presence of birds near the crops.

LITURATURE SURVEY

Jialong Zhang, "Scarecrow: Deactivating Evasive Malware via Its Own Evasive Logic"; Security analysts widely use dynamic malware analysis environments to exercise malware samples and derive virus signatures. Unfortunately, malware authors are becoming more aware of such analysis environments. Therefore, many have embedded evasive logic into malware to probe execution environments before exposing malicious behaviors. Consequently, such analysis environments become useless and evasive malware can damage victim systems with unforeseen malicious activities. However, adopting evasive techniques to bypass dynamic malware analysis is a double-edged sword. While evasive techniques can avoid early detection through sandbox analysis, it also significantly constrains the spectrum of execution environments where the malware activates. In this paper, we exploit this dilemma and seek to reverse the challenge by camouflaging end-user execution environments into analysis-like environments using a lightweight deception engine called SCARECROW. We thoroughly evaluate SCARECROW with real evasive malware samples and demonstrate that we can successfully deactivate 89.56% of evasive malware samples and the variants of ransomware (e.g., WannaCry and Locky) with little or no impact on the most commonly used benign software. Our evaluation also shows that SCARECROW is able to steer state-of-the-art analysis environment fingerprinting techniques so that end-user execution environments with SCARECROW and malware analysis environments with SCARECROW become indistinguishable.

Keita Higuchi, "Scarecrow: Avatar Representation Using Biological Information Feedback"; Scarecrow is an avatar representation method that uses biological information to improve the immersive experience. Traditional computer games and virtual reality (VR) environments focus on operability and the immersive experience. Controller devices are used to communicate from the real world with the virtual world. The usability of control methods affect the immersive experience of the users. Recently, many of these VR environments have adopted motion sensors (e.g. Microsoft Kinect sensors) Motion sensors can measure the user's movements and gestures to input control parameters for the virtual world and a self-avatar. Motion sensor-based games can help users to become more active and take steps to advance their health. Biological information, such as heart rate, body temperature, and muscle fatigue change depending on exercise volume. In this paper, we use a real-time biological information feedback to synchronize the user and the avatar representation. For instance, the color of the avatar changes according to the skin temperature of the user's face. We hypothesize that this representation method will motivate user activities, and improve the immersive experience. We implement a Scarecrow prototype using a streaming server for measurements of the user's behaviors and a front-end exercise game. We also perform an early user study to report the user experience and discuss the effects of the proposed method. We discuss the potential of the Scarecrow, which might encourage human exercise activities, and control human biological information.

Shreedhar Panigrahi, "IOT Based Smart Sensor Agriculture Stick for Live Temperature and Moisture Monitoring"; Internet of Things (IoT) technology has evolved in each and every field of common man's life by making everything smart and intelligent. IoT refers to a network of things which make a self-configuring network. The development of various different Intelligent Smart Farming IoT based devices is day by day changing the face of agriculture which helps in production of crops by not only upgrading it but also making it cost-effective and reducing wastage. These paper is to propose a Smart IoT based Agriculture Stick that will farmers in getting live Data of Temperature, Soil Moisture, etc and other factors for efficient environment monitoring which will help them to do smart farming and increase their overall yield and quality of products. The Agriculture stick being proposed through this paper is integrating with Arduino Technology, Breadboard and mixed with different various sensors and live data feed can be obtained online through mobile phone. The product being proposed is tested on Live Agriculture Fields giving high accuracy in data feeds in different soil condition at different locations.

Rahul Mapari, "Smart Agriculture Scarecrow"; As our country's subsistence farmers continue to encroach on natural ecosystems, the interaction between farmers and animals grows, resulting in conflicts. We investigated how raiding patterns fluctuate with different seasons, farm land, and crop varieties. A smart scarecrow system has been proposed here to minimize crop raiding and man animal conflict from wild animals and birds. The scaring system works in three parts, such as object detection, message sending, and automatic height adjustment. Object detection is done by the PIR sensor and preventive action has been taken by initiating a servo, speaker, and blinking light. After object detection, alert will be sent by IoT cloud to the farm owner. Depending upon seasonal cropping, the pattern height of the system gets automatically adjusted by using motor, string pulley, and sliding drawer mechanism after the activation of ultrasonic sensor. The proposed study obtains the samples from different farms that are combined and observed how the object detection vary day and night in three seasons in order to provide the overall system efficiency. It is more convenient and cost effective than traditional scaring strategies like trapping, hunting, and wood fencing. The present system is made up of metal body, which does not require any manpower and at the same time, it can work under any worst climate conditions.

AIM & OBJECTIVES

1. Remote monitoring of farm conditions and infrastructure saving labor on routine farm checks.
2. Improving producer's decision making through data analytics
3. Faster and quicker Insight from real -time helping farmer respond to what the market wants.
4. Inefficiency in how we produce food to insure less wastage expediency to Market, and enhanced traceability to demonstrate and suspend able food to our costumer.
5. Building the capability to respond to new and emerging technologies and investing in research and development to contribute to ongoing innovation and improved productivity.

MOTIVATION

Traditional farming has been, is, and will continue in the future to be a manual and labor-intensive industry. … To address these challenges, efforts and research are in place to improve the quality and quantity of agriculture products by making them 'connected' and 'intelligent' through "smart farming". Farmers being confronted with a labor shortage, more stringent legislation, increasing global population and the declining numbers of farmers, forces them to look to new solutions. With technologies such as the Internet of Things (IOT), Big data & Analytics, Artificial Intelligence (AI) And Machine Learning (ML) entering almost all industries. By monitoring the eating habits of your livestock and thus giving your livestock higher quality food and more optimal times you can reduce the amount of CO2 emissions. By implementing all of these things you can make a great effort towards Climate-smart agriculture. A form of sustainable smart farming.

SCOPE

When things like household appliances are connected to a network, they can work together in cooperation to provide the ideal service as a whole, not as a collection of independently working devices. This is useful for many of the real-world applications and services, and one would for example apply it to build a smart residence.

PROBLEM STATEMENT

The agricultural farming is done by using human eye's where farm are protected by (dummy person) which is made of grass pot as a inspectors however, the accuracy of human infection is unstable due to fatigue, and it's more challenging for human eyes to detect brides attack on the crops. To avoid person usually use the anonymous or rope to protect Crops. Therefore, automated inspection becomes a popular way for substituting human inspection as machines are good at repeating a same task without fatigue until now most automated crop inspector machine are realize by using visual inspection systems.

SYSTEM ARCHITECTURE

The proposed model focuses on predicting the credibility of customers forloan repayment by analyzing their behavior. The input to the model is the customer behavior collected. Based on the output from the classifier, decision on whether to approve or reject the customer request can be made. Decision Tree Induction data mining technique is used to generate the relevant attributes and also make the decision in the model. data mining model of the proposed system is as depicted in figure.

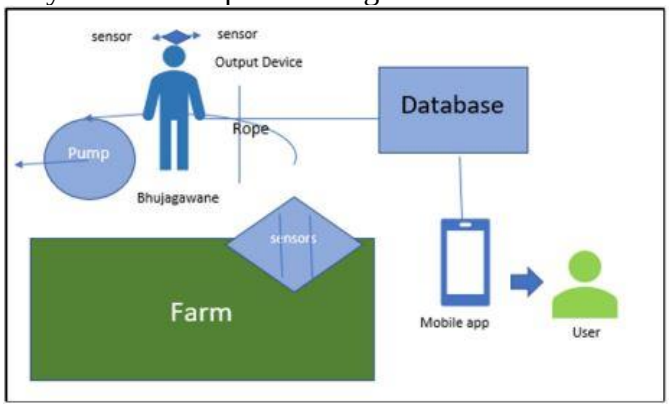

Fig -1: System Architecture Diagram

System Models

1. Data Collection
2. Data Pre-processing
3. Feature Engineering
4. Imputation
5. Handling Outliers

APPLICATION:

- Farming/ Agriculture
- Nurseries

METHODOLOGY

Methodology Design system takes two major parts by hardware module and software module, the hardware module is designed by schematic diagram, the software module is developed using C-language, in case of gas leakage. The gas sensor will detect the gas leakage and will then make the sensor output have a certain voltage value (analog voltage) . When the output voltage of the curtain has exceeded the specified limit value (settings) then this condition will microcontroller automatically activated the Buzzer to sounding to mark the people closest to the place is accompanied by an alert on the LCD screen of the device. This paper will discuss how the MQ-6 gas sensor using the node MCU microcontroller is used for the detection of LPG gas leakage. Power supply is a device used to supply power to all chips and components of the system, the supply is regulated for constant +5 volt DC the ARDUINO Uno microcontroller based system requires a power supply with a maximum current of 1A. On the ARDUINO board itself voltage will be changed to + 5V voltage. The MQ-6 gas sensor is a sensor that has a fast response to leakage gas LPG (liquid

CONCLUSION

These days food demand is increased due the population, so the way of farming is very important to reach the demand of public. Focus on smarter and efficient way of cultivation is crucial. The improvement of new practices of increasing crops yield and handling, recently youth are inclining towards agriculture and choosing it as profession. Technology like IOT helps them to simplified way of cultivation and monitoring crops by accessing the information using mobiles and internet. Taking these factors into consideration mainly IOT, which makes the farming smarter to meet the expectations in future. We use sensors, cloud Mobile app, buzzers and other devices as discussed earlier. Various farming methods and how effective they work. An IOTsystem Development for agriculture could resolve many real-time issues by increasing the quality and

production management which enables the farmers to access huge amount of results from the real-time data from the crop field.

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