Initial report on Research project

Student id**: 17070831.**

Research topic**: Disease detection and health data of the plant**

Abstract:

Plant diseases critically effect agriculture production. To minimize this damage the plant disease detection and plant health data storage techniques using machine language, augmented reality is determined and implemented. In the current age one of the major thing need for mankind is good health, the important thing which is important in agriculture along with irrigation is yielding organic crops.

This research paper is mainly focused to provide organic food to mankind by using computer science technology.

The present research will be achieved by capturing the plant and soil data. And measures to be taken in order not to use agro chemical solutions, since it is a well-known fact that the organic food is good for health and there is a chance for growth in GDP(gross domestic product) in both developed and developing countries.

Introduction:

Agriculture is the foundation of human food, there are numerous things ought to be considered here with the propelled farming strategies there is an opportunity for better yield result.

For my exploration the significant pretending requirements are observing plant wellbeing, anticipating climate and measures to be taken on the plants, to give unfortunate produce and its wastage in this way, that a plant can develop well without utilizing agro-substance arrangements, the plants and soil are intended to be resolved through profound learning and grouping calculations.

Background:

There are so many techniques so far for smart irrigation and detection of plant and leaf diseases, the computer science techniques used in these previous related researches was capturing images of the leaf and plant to find diseased spots using different techniques like Algorithms and image segmentations and many more automatic disease detection techniques.

In this research an application is developed, since the use of hardware in this research is minimal and this application is financially feasible, has great market potential and competitive advantages too. New machine learning schema called deep learning has been widely used in this research has one of the most promising technique.

main reason to focus on this research area is because the agriculture sector is always prefer for low cost technology techniques and good yield without using any chemical solutions ,with the above mentioned techniques we can expect a high yield and a good impact on the overall economy.

This research topic is not limited to the above addressed constraints only, Also it can be leveraged across various industries, the capability of this research is endless, this research is also can have a greater possibilities for implementation across the industries, with this technique using drone cameras we can detect soil erosion, alerting the farmers from wild life attack, pest infestation and, disease detection.

This technique is also useful in various sectors like manufacture and process of tea and coffee, health industry to detect skin diseases, hair density, hair fall etc.

Method:

The software and hardware equipment's and applied software techniques used in this research is arduino, machine learning, augmented reality, android all these are under the CICD framework.

In this research the first step is collecting data from various IOT sensors to capture plant and soil data which are controlled by arduino.

The weather data fetched continuously from online open sourced API's.

To analyze and process the data we make use of machine learning algorithms like support vector classification and random forest regression.

Based on weather condition, plant condition and soil condition the data processing layers checks and sends alerts to the end user if a manual intrusion is necessary.

Tableau can be used for final reporting purpose to analyze the statistics of field health.

All this has been planned to be deployed on cloud and leverage its open source services.

Augmented reality can be leveraged using Sumerian service by AWS. Through Sumerian, we can detect any diseases that affect the plants.

When we say CICD framework, we want to publish the code on GIT-HUB and build a cloud formation template to make it easy for future enhancement and deployment purposes

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