Indo-Iranian Journal of Scientific Research (IIJSR)
Volume 1, Issue 1, Pages 154-156, October-December 2017

Role of IoT in Agriculture: Smart Farming with Advanced Technology

Dr. K.Sujatha[1] and Dr. Sheryl Radley[2]

[1]*Associate Professor, Department of CSE, Sri Krishna College of Engineering and Technology, Coimbatore, Tamilnadu, India.*
[2]*Associate Professor, Department of ECE, Meenakshi College of Engineering, Chennai, Tamilnadu, India.*

Article Received: 05 October 2017 *Article Accepted: 29 October 2017* *Article Published: 11 November 2017*

ABSTRACT

This paper provides an overview of different video content modeling techniques, retrieval techniques and also the classification techniques employed in existing content-based video indexing and retrieval (CBVR) systems. Based on the requirements for modeling of a CBVIR system, this paper analyzes and categorizes the existing modeling approaches. Starting with a review of video content modeling and representation techniques, this paper presents view-invariant representation approaches and the corresponding performance analysis too. Based on the current status of research in CBVR systems, we have identified the video retrieval approaches from spatial and temporal analysis. Finally, a summary of future trends and open problems of content-based video modeling retrieval and classification is also provided.

Keywords: Video content modeling technique, Classification technique and Video retrieval approach.

INTRODUCTION

"***Whoever makes two ears of corn, or two blades of grass to grow where only one grew before, deserves better of mankind, and does more essential service to his country than the whole race of politicians put together***" an old quote by Jonathan Swift. In agriculture business India needs more attention and has to grow fast with the technological improvement. As nowadays Internet of Things coined as IoT plays a vital role in the Agriculture field right from seeding to harvesting of the crop, this article tries to throw some light on this aspect of IOT. In this quickly growing agriculture business smart farming is a concept which is upcoming with technology. IoT plays a vital role in harvesting techniques like automated seeding, precision crop control, and automated monitoring system. A recent report from a very popular magazine states that the smart farming with IoT will help to improve the food production by 70 percent by 2050,as the population of the world is 9.6 billion. Due to the growing concern about farming like the change in climate, limited arable land for farming and the cost and the availability of fossil fuels, there is a need for the expansion of this cultivation which resulted in Smart farming [1].

IoT based agriculture production system with the help of the sensor for stabilizing between the supply and demand has been managed. With the recent technology the prediction of the human need is obtained , that's is the demand by the consumption of agriculture products with some of the prediction systems could be forecasted in quantitative wise and the variation in the harvest in accordance to the demand can be changed. The change in weather, climatic Changes, disease and damage due to the insects are some of the aspects which affects the supply chain. An IoT [4] based production and monitoring system proposed by [1] helps in monitoring the need of the country and the steps taken to improve it by a model based method. The IoT-based agricultural production system through correlation analysis between the crop statistical information and agricultural environment information has enhanced the ability of farmers, researchers, and government officials to analyze current conditions and predict future harvest. Additionally, agricultural products quality can be improved because farmers observe whole cycle from seeding to selling using this IoT. [2] Describes the role of IoT in the logistic process of agriculture product which includes the several services like storing of the product, loading and unloading of goods transport and the rationing. In this

regard even the NDRC project " National Large and medium-sized agricultural products market informatization construction projects", helps in the funding such research to have a fruitful distribution. The main aim is to develop the national large and medium agricultural-fresh products logistics process management system, through the management system to monitor the transport of agricultural products of the number, type and environment temperature and humidity, the speed of transport, routes, locations and drivers personal information and so on. In case of flower or the vegetable transport there is always a need for the venders about the movement of the goods vehicle .hence with the GPS the vehicle monitoring system is proposed for the ease of farmers which enables the local calamity warning system which ensures the safe transport and the prediction of the delivery. Right from seeding to the harvesting the technology helps. A data driven precision agriculture maximized the yield [3].

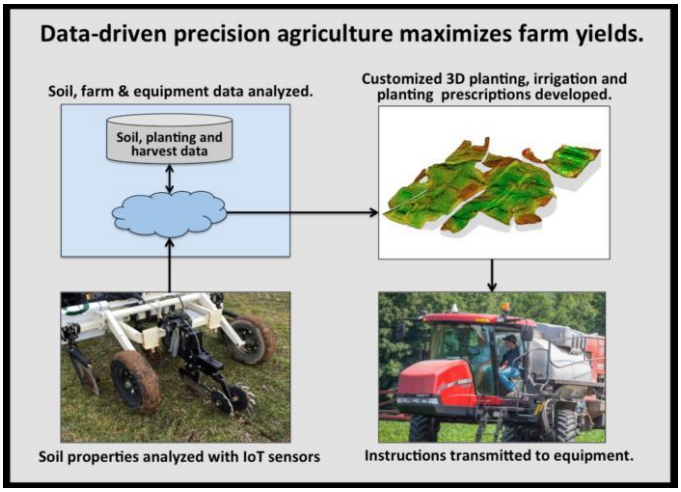

Fig.1: Steps involved in Precision agriculture

A Farm can be evaluated with some of the IoT based models which helps in evaluating the potential of yield and the target crop and the profit attained through that crop. By using such models the farms can grow not suffer as it is happening in the country. The soil can be analyzed with the sampling methods, the ground evaluation helps in on form data yield and equipment capabilities. Figure 1 gives the detail description of the above mentioned concept.
A Prescription development system helps in optimizing the sowing of the seed and the application of fertilizer and chemicals to the plant. Then the analysis helps in planning the profit with upcoming market rate. Biological and genetic research helps in the production of genetically modified seeds [5]. And the global positioning system helps in motoring the planting and spraying. Sensors frequently measures the moisture, soil culture and the area of growth with different colored graphs in the monitoring system, which reflects the data .From this data the prediction system gives the approximate estimation of the yield.

REFERENCES

[1] Moummadi, K., Abidar, R. and Medromi, H., 2011, April. Generic model based on constraint programming and multi-agent system for M2M services and agricultural decision support. In Multimedia Computing and Systems (ICMCS), 2011 International Conference on (pp. 1-6). IEEE.

[2] Li, Jianting, and Yingpeng Zhang. "Design and accomplishment of the real-time tracking system of agricultural products logistics process." E-Product E-Service and E-Entertainment (ICEEE), 2010 International Conference on. IEEE, 2010.

[3] Lei, Hua. "GPRS-based remote vehicle monitoring system'." Telecommunications Information: network and communication,(2)(2007): 16-18.

[4] https://engineering.purdue.edu/oatsgroup/docs/paper_hawkins_1.pdf

[5] Askey, Jeff C., et al. "Automated logistics processing of GIS data for agricultural harvest equipment." 2013 Kansas City, Missouri, July 21-July 24, 2013. American Society of Agricultural and Biological Engineers, 2013.