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Recent Trends, Advancements, Applications and Challenges in Agriculture Engineering and Technology

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DESCRIPTION

Nowadays, the significance of food in human existence has been thought of. America and European nations set apart on the development of modern farming reason, and they realized that everything is not possible without food security.

This issue alongside the absence of developed grounds has prompted further development R and D as the best arrangement of farming advancement as an industry. During the late twenty years; normal pay has surprisingly expanded in agricultural nations. Financial experts uncover that this development in identified with expanding of HR, accessible capital and uncommonly specialized grew so these days all nations have zeroed in on R and D and drawing in outside investigates step by step improving their affordable limit and assembling more items thusly preparing of HR appears to be an absolute necessity issue, this notwithstanding the way that R and D costs show up in types of creation, specialized changes, and innovation.

Considering this assortment underway capacity and financial development models not just impacts on friendly and monetary country structures yet on drawing in financial backer to underwrite in a nation are truly compelling, henceforth presence of predominant R and D in agribusiness relying upon fitting contributing. In such manner, creation becomes conceivable in two ways; 1) More utilization of creation factors at which absence of water is the fundamental confining variable during a long time, 2) Utilizing more present-day techniques at which "proficiency" considers and alludes to unavoidable components in expanding the stockpile of horticulture. Farming information should introduce in a type of R and D plan then, at that point stream underway capacity in its in fact structure, in this manner agribusiness needs profound research to be made movements. There are various creations limitations in any nation subsequently innovative work arranging is of significance with respect to this issue that by expanding input efficiencies, the creation of horticulture crops reduces. The absence of any significant thing in horticulture creation move that it's actually subbing is a commitment to decreasing of expenses.

Arvanitis and Symeonaki have described recent developments and pioneering technologies in the era of Agriculture 4.0 [1]. The authors have discussed some smart technologies which are helpful in resolving and advancing the challenges and issues of agriculture. The technologies include Cyber-Physical Systems, Cloud computing, IoT (Internet of Things), AI (Artificial Intelligence), ML (Machine Learning), BDA (Big Data Analytics). They concluded that smart technologies play a vital role in helping farmers to face critical problems in agriculture.

Chen and Yada have described Nanotechnologies in agriculture as new tools for sustainable development [2]. The authors have discussed some nanotechnologies which are helpful in resolving issues of agriculture. The technologies include Field sensing systems to monitor the crop condition, Nanotechnologies in plant-based agricultural production and products, Improving feeding efficiency and nutrition of agricultural animals.

Monika has described the Farming area assumes an essential part in oneself supporting the financial advancement of a nation by giving fundamental fixings to humanity and crude material for industrialization [3]. The authors have discussed some Biosensors to help agricultural challenges and their future prospects. The technologies include

Biosensors for pre-harvest agriculture, Biosensors for post-harvest agriculture, and Biosensors for artificially ripened fruits and vegetables, Biosensors for intelligent food packaging.

Goumopoulos and Christos have described Wireless Sensor/Actuator Network for Precision Irrigation in Greenhouses to implement zone-specific irrigation control in greenhouses *via* wireless communication [4]. Our research has focused on the provision for proactive applications by deploying sensor networks and connecting sensor data with actuators through an ontology-based decision-making layer.

CONCLUSION

In this overview, we present an extensive survey of the best in class in IoT organizations for secured horticulture applications. Initially, a straightforward survey of past IoT structures was given. Also, the essential IoT designs ensured horticulture was presented. Then, conversations of the sensor, information correspondence, distributed computing, edge registering, ML, and other indispensable IoT innovations in ensured horticulture are expounded.

At last, nitty-gritty examinations of IoT research difficulties and future possibilities were illustrated. The overview of the current works guides our closing comments. The future possibilities of IoT in secured agribusiness are hopeful, however, the difficulties referenced above should deal with.

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