

Smart Agriculture IoT Solutions for Potato Farming Optimization Using Data Mining Techniques

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Abstract:

The advancement of smart agriculture technologies has opened new possibilities for optimizing crop production and resource management. This study focuses on the development of an IoT-based system for enhancing potato farming through the application of data mining techniques. IoT sensors are deployed to monitor critical agricultural parameters such as soil moisture, temperature, humidity, and nutrient levels in real-time. The collected data is processed using data mining algorithms to uncover hidden patterns and relationships that inform decision-making related to irrigation scheduling, fertilizer application, and pest control. Techniques such as classification, clustering, and association rule mining are employed to generate actionable insights, thereby improving crop yield, reducing resource waste, and minimizing environmental impact. The proposed smart farming framework demonstrates how the integration of IoT and data mining can transform traditional potato cultivation into a data-driven, efficient, and sustainable agricultural practice.

Keywords:

Smart agriculture, IoT, data mining, potato farming, crop optimization, precision farming.

REQUEST FOR FULL TEXT

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