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Data Mining Applications in IoT and Smart Agriculture for Potato Farming Optimization

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Abstract:

The integration of data mining techniques within Internet of Things (IoT)-enabled smart agriculture systems has significantly enhanced potato farming by enabling precise, data-driven decision-making. IoT devices, such as soil moisture sensors, weather stations, and drones, collect real-time data on environmental conditions, which is then analyzed using data mining algorithms to uncover patterns and insights. These insights facilitate optimized irrigation scheduling, pest and disease prediction, and yield forecasting, leading to improved resource utilization and crop productivity. Furthermore, the application of data mining in smart agriculture supports sustainable farming practices by reducing input waste and minimizing environmental impact. By leveraging the synergy between IoT and data mining, potato farmers can achieve higher efficiency, better crop management, and increased profitability.

Keywords: Data Mining, IoT, Smart Agriculture, Potato Farming, Precision Agriculture, Crop Optimization

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