Crop Disease Prediction and Yield Prediction with Chatbot

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Abstract: *Agriculture plays a crucial role in the global economy, and the adoption of advanced technologies can significantly improve productivity and sustainability. This project presents a machine learning-based system for crop disease prediction and yield estimation, aimed at assisting farmers in making informed decisions. The system processes historical and real-time agricultural data, including environmental conditions and crop characteristics, to provide accurate yield predictions and early disease detection. Machine learning algorithms such as Decision Tree, Random Forest, Naive Bayes, and Artificial Neural Networks (ANN) are applied to analyze patterns and generate insights. The system also integrates an interactive chatbot to provide farmers with real-time recommendations regarding crop health, disease prevention, and optimal farming practices. By leveraging data-driven analytics, this project aims to reduce crop losses, optimize resource utilization, and enhance agricultural productivity. The results demonstrate that machine learning models significantly improve the accuracy of predictions, making this system a valuable tool for modern agriculture.*

Keywords: Crop Disease Prediction, Yield Estimation, Machine Learning, Chatbot, Precision Agriculture