Abstract

Project Paradox is an advanced web-based smart farming platform designed to modernize agriculture and empower farmers by providing intelligent digital tools. The platform incorporates four essential features aimed at addressing critical farming challenges. The Crop Recommendation System utilizes location and soil type data, sourced from the OpenCage API, to recommend the most suitable crops for optimal yields. The Grow Guide offers farmers immediate access to helpful resources such as YouTube videos and articles tailored to specific crops, aiding in effective cultivation practices. The Crop Disease Detection feature employs machine learning to analyze images of affected crops, identify potential diseases, and provide recommended remedies. Finally, the Services Section connects farmers with nearby agricultural service providers such as tractor rentals, fertilizer stores, and expert consultants through a location-based search function. Built using Django, React.js, Tailwind CSS, MySQL, and integrated external APIs, Project Paradox is designed to scale, with plans for future enhancements like mobile app support and personalized, climate-based farming advice. By bridging the gap between traditional farming methods and modern technology, Project Paradox aims to increase agricultural productivity, reduce uncertainty, and promote sustainable farming practices for the future

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