

AgroAI-Smart Farming Assistance System

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Abstract: *Smart Farming Assistance System is an AI-based web application developed to assist farmers in making intelligent and data-driven agricultural decisions. Traditional farming practices often rely on manual estimation and experience-based judgment, which may lead to improper fertilizer usage, inaccurate yield prediction, and reduced productivity. The proposed system integrates soil nutrient analysis, fertilizer recommendation, yield prediction, chatbot assistance, and voice interaction into a single smart platform. It analyzes key parameters such as Nitrogen (N), Phosphorus (P), Potassium (K), rainfall (mm), land area (acres), seed quality (%), and fertilizer usage (kg) to classify agricultural conditions into Low, Moderate, and High levels and estimate crop yield in quintals. Additionally, the integrated chatbot and voice assistant provide real-time guidance to farmers, improving accessibility and usability. The system promotes sustainable farming practices, enhances productivity, and demonstrates the effective application of artificial intelligence in modern agriculture..*

Keywords: Artificial Intelligence, Smart Farming, Yield Prediction, Soil Health Analysis, Fertilizer Recommendation, Chatbot System, Voice Assistant, Precision Agriculture, Sustainable Agriculture, Web-Based Application

