

AgroNexus AI: Revolutionizing the Agriculture with AI-Powered Intelligence and Advanced Solutions

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Abstract: *AgroNexus AI is an advanced AI-driven platform designed to transform the agricultural sector by assisting farmers in enhancing productivity, sustainability, and decision-making. The platform integrates cutting-edge machine learning and deep learning techniques to address key agricultural challenges through its comprehensive modules. The crop prediction module analyses soil properties and weather conditions to recommend suitable crops, ensuring optimal yields. The fertilizer analysis module evaluates soil health and suggests appropriate fertilizers to improve soil quality, promoting long-term fertility. The plant disease detection module utilizes a deep learning ResNet-9 model to identify plant diseases from images, enabling early diagnosis and timely intervention. The Ayurvedic plant analysis module, powered by a ResNet-18 model, identifies medicinal plants, providing insights into their characteristics, medicinal uses, and local Marathi names. Additionally, AgroNexus AI connects farmers with government schemes and agricultural services, facilitating access to essential resources and support systems. By leveraging data-driven insights and AI technologies, the platform empowers farmers to make informed decisions, optimize resource utilization, minimize crop losses, and maximize productivity, ultimately contributing to sustainable agricultural development and improved livelihoods*

Keywords: Agriculture, AgroNexus AI, Convolutional Neural Networks Deep Learning, Image Processing, Sustainable Environment

