UrbanNest AI: A Comprehensive Plant Disease Detection And Recommendation System

A PROJECT REPORT

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(Under Section 3 of UGC Act, 1056)

BONAFIDE CERTIFICATE

Certified that this project report titled **"UrbanNest AI: A Comprehensive Plant Disease Detection And Recommendation System"** is the bonafide work of Priyansh Neel [RA2311056030183], Altamash Beg[RA2311056030182], Yash Bhushan Pandey [RA2311056030172] who carried out the project work under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other project report.

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ABSTRACT

In recent years, the fusion of artificial intelligence (AI) and healthcare has paved the way for innovative digital solutions aimed at making medical support more accessible, efficient, and personalized. The "HealthNexus AI" project embodies this integration by delivering an intelligent, AI-powered virtual health assistant that facilitates preliminary health assessments through natural language conversations. This system is designed to interact with users in a conversational manner, collect symptom-related data, and provide probable diagnoses along with appropriate recommendations, simulating the initial consultation process with a healthcare professional.

Built using the Streamlit framework and powered by Google's Gemini Generative AI model, HealthNexus AI leverages the capabilities of large language models (LLMs) to understand and respond to user inputs in real time. The chatbot is trained to follow a professional and empathetic tone, asking relevant medical questions step-by-step to narrow down possible health conditions. It also emphasizes the importance of consulting a qualified medical practitioner, clearly stating its limitations as a digital assistant.

A notable feature of HealthNexus AI is its ability to maintain contextual understanding across sessions, allowing for smooth and meaningful conversations. The chatbot preserves chat history to ensure that redundant questions are avoided and the discussion remains medically coherent. At the end of the session, users can receive a comprehensive report that includes the full conversation and a structured medical summary. These reports are generated in both text and PDF formats, suitable for sharing with healthcare providers if needed.

Furthermore, the system includes a refresh functionality, session-based memory, and an exit protocol that triggers automated report generation. This ensures a seamless user experience and offers users a clear, organized overview of their session. Through this project, we demonstrate the power of AI in revolutionizing healthcare accessibility, enhancing the user experience for individuals who seek immediate, preliminary insights into their health concerns.

HealthNexus AI serves as a bridge between users and medical awareness by promoting early attention to symptoms, guiding users with educational responses, and reducing dependency on unreliable online sources. Although it does not replace real medical consultation, it lays the groundwork for AI-assisted pre-diagnosis systems that can be further developed in collaboration with certified healthcare professionals.

TABLE OF CONTENT

CONTENT   Page no.