DermAI: Accessible Skin Disease Screening

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AI for Sustainability

The Challenge

Healthcare Inequality in Dermatology

In many rural and underserved regions, access to specialized dermatological care is severely limited. Patients often face high consultation costs, long travel distances, and significant wait times to see a specialist. Consequently, common skin conditions ranging from benign issues to serious diseases like melanoma often go undiagnosed or are treated incorrectly until they reach advanced, dangerous stages. This lack of timely diagnosis widens the global health inequality gap and leads to preventable complications that could have been managed with early detection.

The Solution

Introducing DermAI

DermAI is an AI-powered web application designed to democratize access to skin health analysis. It serves as an accessible preliminary screening tool where users can simply upload a clear photo of an affected skin area. The system instantly analyzes the image using advanced computer vision to identify visual patterns such as asymmetry, color variations, and border irregularities. By providing a probable classification and a confidence score, DermAI acts as a critical triage tool, empowering users to make informed decisions about whether they need to seek immediate professional medical attention.

Technology & Impact

Innovation for a Better Future

The core of DermAI is a deep learning Convolutional Neural Network (CNN) trained on the HAM10000 dataset, which contains over 10,000 dermatoscopic images. Developed using Python, TensorFlow, and Keras, the model learns to distinguish between seven different categories of skin lesions with high accuracy. The project directly contributes to SDG 3 (Good Health and Well-being) by ensuring that high-quality health screening is not a luxury, but a resource accessible to anyone with a smartphone, ultimately reducing the burden on healthcare systems and saving lives through early intervention.

Conclusion

Conclusion & Future Vision

DermAI represents a significant step towards leveraging technology for social good. By bridging the gap between advanced medical diagnostics and everyday accessibility, this project demonstrates how Artificial Intelligence can effectively address the targets of SDG 3. While currently a screening prototype, the future vision for DermAI includes integration with telemedicine platforms to connect patients directly with doctors and expanding the dataset to include a wider range of skin tones and conditions. Ultimately, this project proves that with the right tools, we can build sustainable solutions that make healthcare more inclusive and equitable for everyone.