DermaSense: A Deep Learning–Driven Personalized Skin Care Recommender System

"Smart Guidance for Healthier and Radiant Skin Through AI"

Skincare plays a vital role in maintaining overall health and confidence, yet many individuals face challenges in understanding their specific skin type and the underlying issues affecting their skin. Incorrect product choices often lead to adverse reactions such as acne, pigmentation, dryness, dullness, or excessive oiliness. Addressing this growing concern, DermaSense introduces an intelligent Deep Learning–based personalized skincare recommender system designed to guide users toward healthier and more suitable skincare routines.

DermaSense leverages the power of Convolutional Neural Networks (CNNs) to analyze facial images and automatically determine the user's skin type while detecting common skin concerns such as acne, dark spots, wrinkles, and texture irregularities. Along with facial analysis, the system considers essential user inputs—including age, personal skin concerns, lifestyle factors, and budget—to generate highly personalized and actionable skincare recommendations. These recommendations include both product-based suggestions and natural home remedies, ensuring flexibility and inclusivity for different user preferences.

Beyond recommendations, DermaSense incorporates advanced intelligent features to support long-term skincare improvement. It offers weekly skin progress tracking, a skin health scoring mechanism, budget-based product filtering, weather-adaptive skincare suggestions, personalized reminder notifications and customer feedback. These features help users monitor changes, stay consistent with their routine, and adjust their skincare plan based on environmental conditions.

By integrating Deep Learning, Artificial Intelligence, and personalized analytics, DermaSense serves as a comprehensive and user-friendly digital skincare assistant. It empowers users with accurate skin insights, supports informed decision-making, and promotes healthier skincare habits. Ultimately, the system aims to enhance user confidence, improve skin wellness, and make personalized skincare accessible to everyone.

Keywords:

Deep Learning

Convolutional Neural Networks (CNN)

Skin Type Detection

Skin Concern Identification

Personalized Skincare Recommendations

Artificial Intelligence

Computer Vision

Skin Health Score

Weather-Based Skincare

Natural Remedies

Customer Feedback Analysis