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Integrated Health Monitoring System using Fingerprint and Disease Risk Prediction

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Abstract: *Recent developments in machine learning and biometric systems have had a big influence on healthcare applications. In order to provide a holistic approach to health monitoring, this research introduces a unique method that combines disease risk prediction with fingerprint-based blood group recognition. Based on user-provided health data, the system uses machine learning algorithms to determine the risk of common illnesses including diabetes, cardiovascular disease, and chronic kidney disease (CKD) and convolutional neural networks (CNNs) to identify blood type from fingerprint photos. Through the integration of fingerprint biometric data with health risk modelling, the suggested approach seeks to increase the precision and usability of health forecasts. The system's effectiveness is demonstrated by the evaluation's excellent classification accuracy for blood groups and trustworthy estimates of illness risk.This work demonstrates the possibility of integrating biometric data with predictive health models and offers a promising step toward customized healthcare solutions.*

Keywords: Convolutional Neural Networks (CNN), Fingerprint-based blood group detection, Disease risk prediction, Diabetes prediction, Cardiovascular disease prediction, Chronic Kidney Disease(CKD)

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