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(57) Abstract :
Disclosed herein is a machine learning-based vigilant monitoring system of type 2 diabetes, cardiovascular disease, and hypertension (100) comprises a computing platform (102) configured with an integrated development environment and a software architecture (104) comprising Python libraries used for data handling, visualization, model training, and deployment. The system also includes a health data processing module (106) adapted to receive, preprocess, and analyze health parameters. The system also includes a predictive engine (108) configured to apply a plurality of machine learning algorithms. The system also includes a deep learning model (110) comprising an artificial neural network (ANN), for disease classification and risk prediction. The system also includes an alert and notification module (112) that generates real-time health risk alerts based on predictive output thresholds and transmits. The system also includes a user interface and dashboard component (114) configured to display diagnostic results, visual analytics, risk scores, and personalized health recommendations.

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