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Implementation Paper on AI-Based Clinical Decision Support (Health Card) Deep Learning for Disease Prediction and Recommendation

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Abstract: *With the rapid growth of healthcare data, accurate disease prediction has become an essential challenge in medical science. Early detection of diseases can significantly reduce treatment costs and improve patient outcomes. This work proposes an intelligent disease prediction and health assistance system using machine learning models (XGBoost) combined with medical history and symptom analysis. The system accepts symptoms provided by the user, processes them through an XGBoost classifier, and predicts the most probable disease. It further classifies the severity of the disease into low, moderate, high, or extreme levels. Based on the prediction and severity, the system recommends suitable medicines, dietary plans, exercise suggestions, and necessary precautions, while advising consultation with a doctor for severe cases. By leveraging structured healthcare datasets and machine learning techniques, the proposed system not only enhances disease prediction accuracy but also offers personalized health assistance. This approach contributes to preventive healthcare by enabling early diagnosis, reducing dependency on direct physician consultation, and improving accessibility for patients in remote areas.*

Keywords: XGBoost, Disease Prediction, Machine Learning, Symptom Analysis, Medical Recommendation System, Patient Management

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