

HDP: Heart Disease Prediction Using Machine Learning Techniques

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Abstract: The increasing incidence of heart diseases has become a major concern in the healthcare field, necessitating accurate and efficient diagnosis and prediction of potential risks. In this research paper, we propose a system for predicting the probability of heart disease by leveraging patients' medical history. The system employs machine learning algorithms such as XGBoost, Random Forest Classifier, and KNN to classify patients based on various medical attributes including age, gender, blood pressure, cholesterol levels, and habits. The developed model demonstrates promising results, outperforming previous classifiers such as naive bayes in terms of accuracy, precision, recall, and F1- score. The accurate identification of individuals prone to heart disease can aid healthcare providers in implementing preventive measures, ultimately reducing the incidence of heart disease. This research has significant implications for improving medical care, reducing costs, and enhancing patient outcomes. The system managed to accurately identify individuals who prone to heart disease, which could help healthcare providers take preventive measures to reduce the incidence of heart disease. Overall, the heart disease detection system has significant implications for improving medical care and reducing the costs associated with heart disease. It has the potential to assist healthcare providers in making better- informed decisions regarding patient care, identify patients who have an elevated risk of developing heart disease, and provide them with targeted interventions to reduce the risk. The suggested model is a valuable resource that can improve the quality of care offered to patients and, in turn, contribute to reducing the prevalence of heart disease.

Keywords: Heart Diseases, Machine Learning, Heart Disease Prediction, XGBoost, Random Forest Classifier, KNN, HDP.