Clinical Support System for Predicting Heart Diseases using Machine Learning Techniques

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Abstract: *Heart disease remains a leading global cause of mortality, and accurate prediction poses challenges for clinicians due to its complexity and cost. In this study, we propose a clinical support system for heart disease prediction to aid clinicians in diagnostics and decision-making. Machine learning algorithms, including Logistic Regression, Naïve Bayes, K-Nearest Neighbor, and Support Vector Machine, are applied to risk factor data obtained from medical records. Through experiments conducted on the UCI dataset, Logistic Regression demonstrated superior performance with an accuracy of 91.2% using train-test split techniques. Furthermore, we recommend future validation of our proposed system using prospectively collected data. The findings of this study have the potential to improve heart disease prediction and contribute to more informed clinical decision-making.*

Keywords: Heart Disease, Machine Learning, Logistic Regression, Naïve Bayes, K-Nearest Neighbor, Support Vector Machine

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