Heart Disease Prediction Using Machine Learning

ABSTRACT

Heart disease remains a leading cause of mortality worldwide, necessitating the development of effective and timely diagnostic tools. This project explores the application of machine learning (ML) techniques to predict the likelihood of heart disease in individuals based on clinical and lifestyle attributes. By leveraging historical datasets and implementing supervised learning algorithms such as Logistic Regression, Random Forest, Support Vector Machines, and K-Nearest Neighbors, this study aims to enhance diagnostic accuracy and assist medical professionals in early detection. The models are evaluated based on performance metrics including accuracy, precision, recall, and F1-score. The outcomes demonstrate the potential of ML in providing data-driven insights and improving healthcare decision-making, thereby contributing to reduced diagnostic delays and better patient outcomes.