Heart Disease Prediction and ECG Analysis

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Abstract*: Heart disease remains a leading cause of mortality worldwide, necessitating effective detection and management strategies. In this project, we leverage machine learning algorithms to develop a robust heart disease detection system. The dataset used comprises various clinical attributes such as age, gender, chest pain type, and biochemical markers. Through exploratory data analysis and visualization, we gain insights into the dataset's characteristics and correlations between features. Subsequently, we implement several machine learning algorithms, including Logistic Regression, Decision Tree Classifier, K-Nearest Neighbors (KNN), and Support Vector Classifier (SVC), to predict the presence of heart disease based on patient attributes. Model performance is evaluated using metrics such as accuracy score, enabling comparison and selection of the most effective algorithm for heart disease detection. Our findings underscore the potential of machine learning in augmenting traditional diagnostic approaches and paving the way for early intervention and improved patient outcomes in cardiovascular health.*

Keywords: Logistic Regression, Decision Tree Classifier, K Nearest Neighbour, Support Vector Classifier