

Summary/Synopsis: Heart disease is a significant public health issue in the United States, responsible for one in every five deaths annually. To address this, I conducted an analysis using a heart disease dataset that merged information from multiple international sources, consisting of 1,190 instances and 11 features. Leveraging Python, I explored data relationships through visualizations and built predictive models. The Random Forest model outperformed Logistic Regression, achieving a higher accuracy and precision rate. Key predictors identified included ST slope, chest pain type, oldpeak, and maximum heart rate. While further validation is needed for deployment, these findings highlight the potential for machine learning to aid early heart disease detection and prevention.