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Comparative Study Using Random Forest for Heart Disease Prediction

Kommaraju Gaurav Kalyan
Vardhaman College of Engineering, Telangana
kommarajugauravkalyan@gmail.com

Abstract: *Heart disease is still the predominant killer worldwide, highlighting the tremendous demand for specific early diagnostic techniques. This work investigates the performance of RF model in predicting heart disease, using UCI Heart Disease dataset. The predictive score was achieved by the RF model being 85%, and the precision and recall scores were close to 90%, which was better than many classical models of predication. Feature importance analysis revealed predictive factors of clinical importance, such as chest pain type and ST depression. The model also achieved powerful classification ability and did not require hyperparameter tuning. Considering the accuracy, stability and interpretability, Random Forest can be a reliable one for early cardiovascular risk prediction, and is very promising to be further applied to clinical decision-making support system*

Keywords: Heart Disease Prediction, Random Forest Algorithm, Cardiovascular Risk Assessment

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