Review of: "Implementing Machine Learning to predict the 10-year risk of Cardiovascular Disease"

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Potential competing interests: No potential competing interests to declare.

Cardiovascular disease (CVD) is the primary cause of death worldwide and required accurate risk prediction models are essential for early intervention and prevention. This project has shown to develop a Machine Learning (ML) model for predicting the 10-year risk of CVD.

The UCI Heart dataset served as the training data for various ML models, including Logistic Regression (LR), Decision Trees (DT), Random Forests (RF), Support Vector Machines (SVM), Artificial Neural Networks (ANN), and K-Nearest Neighbors (KNN).

To optimize model performance, Cross Validation (CV), normalization techniques, and hyperparameter tuning were used.

In this study, develop an ML-based model to predict 10-year CVD risk. To begin with, a comprehensive review of the existing literature on traditional tools and ML models for CVD risk prediction was conducted, examining the methodologies, algorithms, and datasets used in previous studies to evaluate the performance of different models. The review highlighted the potential of ML approaches and gaps in the existing research.

This study contributes to the growing body of research on ML-based CVD risk prediction and has the potential to improve clinical decision-making and patient outcomes.

In this study provides compelling evidence that ML models surpass traditional models in CVD risk prediction, as indicated by higher AUC-ROC values. The superior performance of ML models highlights their potential to revolutionize CVD risk assessment and management.

By incorporating a wide range of risk factors, including both conventional and novel predictors, ML models offer a more comprehensive and personalized assessment of an individual's CVD risk.

This approach enables clinicians to tailor preventive interventions and treatment strategies according to each patient's specific risk profile, ultimately improving patient outcomes based on author's experimental outcomes from this studies.