WELLBE - HEART DISEASE PREDICTION PLATFORM BASED ON ENSEMBLE CLASSIFICATION TECHNIQUES

Ranmini Vihangi Nayanathara De Silva Dharmawickrema

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Department of Computing

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Abstract

Heart disease is one of the most common diseases affecting most people in their middle or old age, which can eventually lead to fatal complications. A heart disease occurs when the heart is unable to pump enough blood to all areas of the body. Heart condition diagnosis must be accurate and timely in order to prevent and cure heart disease. Heart disease is responsible for one third of all deaths worldwide. Every year, about 17 million people die from heart diseases, and the cardiovascular disease (CAD) is especially prevalent in Asia due to their lifestyle. Non-invasive approaches such as ensemble learning, machine learning, deep learning, are effective and efficient for predicting healthy people and heart patients.

Wellbe system provide a service that enables medical personal and patients to check whether that person is suffering from a heart disease. Heart disease perdition model required 13 factors to identify heart disease. Ensemble learning enables to get detection from multiple models. Proposed system uses KNN, Random Forest, Gaussian NB and SVC models to develop the hybrid approach to identify heart disease.

Final model has the combination of all the models and also it is used by medical personal and general public. To interact with the model web application is developed. Final model has an accuracy of 85%. Wellbe is evaluated by end users, domain experts and industrial experts.

Key words:

Machine Learning, Ensemble methods, Boosting, Bagging, Cross-validation, Supervised Learning