

Enhancing Heart Disease Prediction using Deep Learning Model

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Abstract – Cardiovascular disease, often known as heart disease, is the most common disease affecting people in general. Heart disease is a general term for any medical issue that impairs the heart's ability to pump blood. The most frequent cause of heart failure is a narrowing or blockage of the coronary arteries, which provide blood to the heart. The most frequent type of heart disease and the main factor in heart attacks is coronary artery disease (CAD).

These days, there is no upper age restriction on who might contract this illness. There are many different ways for diagnosing diseases, but the majority are expensive, risky, and need technical professionals. Before a heart attack happens, effective treatment of cardiac patients depends on the accurate prediction of heart disease. Recently, a variety of machine learning techniques have been proposed to predict and diagnose cardiac diseases. However, these methods are unable to handle large data sets and as a result do not provide accurate results for the prediction of cardiovascular diseases.

The purpose of this study is to assess a deep learning (DNN) model ability to predict the incidence of cardiovascular diseases using a widely used reference dataset.

In comparison to other machine learning models, the deep learning model achieved the highest accuracy, F1-score, and precision values (97.07%, 97.07%, and 97.08%).

Keywords – Cardiovascular Disease, Heart Disease, Coronary Artery Disease (CAD), Deep Learning (DNN), Prediction.