Literature survey

Date	19 September 2022
Team ID	PNT2022TMID03384
Project Name	Project - Visualizing and Predicting Heart Diseases with an Interactive Dashboard
Maximum Marks	2 Marks

1. World Health Organization, Cardiovascular Diseases, WHO, Geneva, Switzerland, 2020,

By applying different machine learning algorithms and then using deep learning to see what difference comes when it is applied to the data, three approaches were used. In the first approach, normal dataset which is acquired is directly used for classification, and in the second approach, the data with feature selection are taken care of and there is no outliers detection. *e results which are achieved are quite prom-
ising and then in the third approach the dataset was nor- malized taking care of the outliers and feature selection; the results achieved are much better than the previous tech- niques, and when compared with other research accuracies, our results are quite promising.of94.06%.

2. American Heart Association, Classes of Heart Failure, American Heart Association, Chicago, IL, USA, 2020,

By providing more reliable and consistent techniques for the detection, classification, reconstruction, denoising, quantification, and segmentation of patterns in biomedical pictures, deep learning and machine learning have made significant advances in the field of biomedical image analysis.

3.T.Hastie, R. Tibshirani, and J. Friedman, "The elements of statistical learning," Data Mining, Inference, and Prediction, Springer, Cham, Switzerland, 2020.2.American

The combination of the datasets used as the NSR-CAD and Self NSR- CAD subjects was subjected to numerical experiments. Using the top ten ranked entropy features, the proposed technique has demonstrated improved performance. In comparison to ELM and linear discriminant analysis (LDA)+ELM for both datasets, the GDA with RBF kernel + ELM having hidden node as multiquadric technique and GDA with Gaussian kernel + ELM having hidden node as sigmoid or multiquadric method both approximated a detection accuracy of 100%. For the diagnosis and analysis of CAD patients, the level-4 and level-3 subspaces of level-3 and level-4 decomposition of HRV signals by MSWP transform can be used.

4. H.Lu and H. Motoda, Feature Extraction, Construction and Selection, Springer, Cham, Switzerland, 1998.

The accurate diagnosis of heart disease can reduce the risk of serious health problems, whereas an inaccurate diagnosis can be fatal. In order to compare the findings and analyses of the UCI Machine Learning Heart Disease dataset, various machine learning techniques including deep learning are used in this study. The dataset has 14 key attributes that will be used in the research. The accuracy and confusion matrix is used to achieve and validate a number of promising results. Isolation Forest is used to manage some unimportant aspects in the dataset, and data is standardized for better outcomes. Also highlighted is how this study may be coupled with other multimedia technology, such as mobile devices. A deep learning strategy resulted in 94.2% accuracy.

5. B. Dun, E. Wang, and S. Majumder, "Heart disease diagnosis on medical data using ensemble learning," 2016.

Deep learning, which belongs to a larger family of machine learning techniques, has the ability to effectively examine a lot of data. In this article, we provide a thorough overview of these machine learning techniques that may be used to improve the functionality and intelligence of an application. Determining the fundamentals of various machine learning approaches and how they can be used in a variety of real-world application areas, including cybersecurity systems, smart cities, healthcare, e- commerce, agriculture, and many more, is thus the core contribution of this work. We also discuss the difficulties and potential possibilities for future research based on our findings. Overall, this work seeks to serve as a resource for decision- makers in a range of practical scenarios and applications, including those in academia and industry.

6. R. S. Singh, B. S. Saini, and R. K. Sunkaria, "Detection of coronary artery disease by reduced features and extreme learning machine

Five years after being diagnosed with heart failure (HF), around 50% of patients pass away. In order to aid cardiologists in improving diagnosis, researchers have created a number of machine learning-based models for the early prediction of HF. In this research, we introduce an expert system that effectively predicts HF by stacking two support vector machine (SVM) models. The $L 1$ regularized linear first SVM model is used. By reducing their coefficients to zero, it can get rid of pointless features. The second SVM model has been regularized with $L 2
$. As a prediction model, it is employed. We provide a hybrid grid search algorithm (HGSA) that can simultaneously optimize the two models in order to optimize the two models.

7. F. Yaghouby, F. Yaghouby, A. Ayatollahi, and R. Soleimani,"Classification of cardiac abnormalities using reduced features

In this study, we introduce a clinical decision support system (CDSS) that analyses patients with heart failure (HF) and generates a variety of outputs, including an assessment of the severity of the HF, a prediction of the type of HF, and a management interface that contrasts the follow-ups of the various patients. The entire system is made up of an intelligent core component and an HF special-purpose management tool that also serves as an interface for training and using artificial intelligence. We utilized a machine learning strategy to put the smart intelligent functions into practice.