HEART DISEASE PREDICTOR USING CLOUD AND MACHINE LEARNING

124176033 R.Harinarayanan

124176097 P.Sivagurunathan

In the context of the world health crisis of 2021, the impulse of many humans to self-diagnose at home virtually, prior to any face to face interaction with medical professionals, has been gradually increased. Existing self-diagnosis systems include those attainable via the internet, which involve entering one's manifestation. There exist several methods, for example, people read/search medical blogs or notes, which are illuminated wrongly by them and they arrive at a completely different presumption regarding the cause of their manifestation.   In this paper, a system called Cloud Watch monitoring is proposed, for monitoring health status of heart patients using machine learning and cloud computing using Amazon Web Service. This study's goal is to join the information required for the person to understand the disease in adequate detail, with an accurate prediction as to whether they may have heart disease or not. The presence of heart disease is predicted using machine learning algorithms such as Support Vector Machine, K-Nearest Neighbours, Neural Networks, Logistic Regression and Gradient Boosting Trees. This paper evaluates these machine learning algorithms to obtain the most accurate model, in compliance with Quality of Service (QoS) parameters. The performance of these machine learning models is scaled and compared using the metrics such as Accuracy, Sensitivity (Recall), Specificity, AUC scores, Execution Time, Latency, and Memory Usage. For better establishment of the results, these machine learning algorithms have been cross validated with 5-fold cross validation technique. With an accuracy rate of 85.96%, it has been found that Logistic Regression is the most responsive and accurate model amongst those models assessed. The Precision, Recall, Cross Validation mean and AUC Score for this model were 95.83%, 76.67%, 81.68% and 96% respectively. The algorithm and the mobile application were tested on Amazon Cloud Firebase with existing user inputs from the dataset, as well as with unseen new data. The use of this system can aid patients, both in reaching self-diagnosis decisions and in monitoring their health.

References:

# HealthCloud: A system for monitoring health status of heart patients using machine learning and cloud computing. Forum Desai (2022).

1. PrabhakaranD. et al. Cardiovascular diseases in India compared with then United States J.Am.Coll. (2018).

Guide Name:

Dr. Lavanya M