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# Heart Disease Prediction and Prevention System

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**Abstract:** *The healthcare domain is one of the prominent research fields in the current scenario with the rapid improvement of technology and data. It is difficult to handle the huge amount of data of the patients. It is easier to handle this data through Big Data Analytics. There are a lot of procedures for the treatment of multiple diseases across the world. Machine Learning is an emerging approach that helps in prediction, diagnos of a disease. This paper depicts the prediction of disease based on symptoms using machine learning. Machine Learning algorithms such as Naive Bayes, Decision Tree and Random Forest are employed on the provided dataset and predict the disease. Its implementation is done through the Python programming language. The research demonstrates the best algorithm based on their accuracy. The performance of the given dataset determines the accuracy of an algorithm.*

**Keywords:** ECG Classification, Convolutional neural network(CNN), heart diseases.

## REFERENCES

**[1].** Hossam Magdy Balaha, Ahmed Osama Shaban, Eman M El-Gendy, and Mahmoud M Saafan. A multi-variate heart disease optimization and recognition framework. Neural Computing and Applications, pages 1–38, 2022.

**[2].** Victor Chang, Vallabhanent Rupa Bhavani, Ariel Qianwen Xu, and MA Hossain. An artificial intelligence model for heart disease detection using machine learning algorithms. Healthcare Analytics, 2:100016, 2022.

**[3].** Harshit Jindal, Sarthak Agrawal, Rishabh Khera, Rachna Jain, and Preeti Nagraph. Heart disease prediction using machine learning algorithms. In IOP conference series: materials science and engineering, volume 1022, page 012072. IOP Publishing, 2021.

**[4].** Ria Nova, Siti Nurmaini, RadiyatiUmiPartan, and SukmanTulus Putra. Auautomated image segmentation for cardiac septal defects based on contour region with convolutional neural networks: A preliminary study. Informatics in Medicine Unlocked, 24:100601, 2021.

**[5].** G Renugadevi, G Asha Priya, B DhivyaaSankari, and R Gowthamani. Predicting heart disease using a hybrid machine learning model. In Journal ofPhysics: Conference Series, volume 1916, page 012208. IOP Publishing,2021.

**[6].** Sumit Sharma and Mahesh Parmar. Heart disease prediction using deep learning neural network model. International Journal of Innovative Technologyand Exploring Engineering (IJITEE), 9(3):124–137, 2020.

**[7].** EcemSogancioglu, Keelin Murphy, ErdiCalli, Ernst T Scholten, Steven Schalekamp,and Bram Van Ginneken. Cardiomegaly detection on chest radiographs: segmentation versus classification. IEEE Access, 8:94631– 94642, 2020.

**[8].** R Sivaranjani and N Yuvaraj. Artificial intelligence model for earlier prediction of cardiac functionalities using multilayer perceptron. In Journal ofPhysics: Conference Series, volume 1362, page 012062. IOP Publishing, 2019

**[9].** Muhammad, Muhammad Tahir, Maqsood Hayat, and Kil To Chong. Earlyand accurate detection and diagnosis of heart disease using an intelligent computational model. Scientific Reports, 10(1):1–17, 2020.

**[10].** Archana Singh and Rakesh Kumar. Heart disease prediction using machine learning algorithms. In 2020 International Conference on Electrical and Electronics Engineering (ICE3), pages 452–457. IEEE, 2020