

Paper ID: MISS21\_27

# Machine Learning Algorithms to Detect Heart Diseases

Avishek Sharma\*, Pranta Sutradhar, Parijata Majumdar

Techno College of Engineering Agartala, Maheshkhala, Tripura, India

\*Corresponding author

## Abstract

**Background:** The heart is one of our body's most essential organs, pumping blood to various organs via veins, arteries. Heart disease is a disorder that impairs the heart's ability to operate. It has now evolved into a serious illness that shortens human life.

**Objectives:** A difficult challenge in the healthcare industry is forecasting cardiac disease data which refers to a large volume of data collected at a rapid pace. These algorithmic approaches [1] will be implemented, executed on the dataset to give best results so that medical practitioners can make rapid 'decisions and diagnose accurately.

**Methodology:** Algorithms Used: The algorithms used are Perceptron, Decision Tree Classifier [2], Random Forest, and K-Neighbors [3].

Libraries used: Numpy: It is the most important Python module for scientific computing and mathematical computations. Scikit-learn: -Sk learn in Python, Scikit-learn (Sklearn) is the most usable and robust machine learning package. Pandas: It is a data manipulation and analysis software package for the Python programming language. Matplotlib: It is used for plotting graphs from numeric data in python.

**Results and Discussion:** If two supervised learning algorithms were used in separate experiments, there's a risk that a performance comparison between them might provide error results. These studies employed a variety of factors or measurements to predict illness [4].

**Conclusion and future scope:** Due to the scarcity of symptom and diagnostic data, data processing and validation of heart-related diseases is a difficult task. The future scope involves using a hybrid ML algorithm utilizing Decision Tree's features with X-ray image classification system for better prediction of results [5],

## References

- [1] Mohan, Senthilkumar, Chandrasegar Thirumalai, and Gautam Srivastava. "Effective heart disease prediction using hybrid machine learning techniques." IEEE access 7 (2019): 81542-81554.
- [2] Prasad, Reddy, et al. "Heart disease prediction using logistic regression algorithm using machine learning." IJEAT ISSN (2019): 2249-8958.
- [3] Marimuthu, M., et al. "A review on heart disease prediction using machine learning and data analytics approach." International Journal of Computer Applications 181.18 (2018): 20-25.
- [4] Krishnan, Santhana, and S. Geetha. "Prediction of Heart Disease Using Machine Learning Algorithms." 2019 1st international conference on innovations in information and communication technology (ICIICT). IEEE, 2019.
- [5] Hazra, Animesh, et al. "Heart disease diagnosis and prediction using machine learning and data mining techniques: a review." Advances in Computational Sciences and Technology 10.7 (2017): 2137-2159

