Rajalakshmi Engineering College

Department of Artificial Intelligence & Machine Learning

III Year (2025 – 2026) - AI23521: Build and Deployment of ML app

Mini Project - Abstract

Title	**Customer churn prediction and retention insights using apache spark MLlib**	
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Heart Disease Prediction

ABSTRACT :

Heart disease is one of the leading causes of death worldwide, and early detection is crucial for effective treatment and prevention. The prediction of heart disease using data-driven approaches can help in identifying individuals at high risk and assist healthcare professionals in making informed decisions. This project focuses on developing a **machine learning-based system** to predict the likelihood of heart disease in a patient based on various medical attributes such as age, gender, blood pressure, cholesterol level, heart rate, and other relevant factors.

The proposed system uses supervised learning algorithms such as **Logistic Regression, Decision Tree, Random Forest, and Support Vector Machine (SVM)** to analyze patient data and classify whether a person is likely to have heart disease. The dataset used for training and testing is obtained from reliable medical sources such as the **UCI Heart Disease dataset**. Performance evaluation is conducted using accuracy, precision, recall, and F1-score metrics to determine the most efficient algorithm.

The results demonstrate that machine learning models can significantly improve the accuracy of heart disease prediction compared to traditional diagnosis methods. This system can be integrated into healthcare applications to support doctors in making faster and more accurate decisions, ultimately contributing to better patient outcomes and preventive care.

SUPERVISOR **REVIEWER**