Computer Science and Engineering Department, SVNIT, Surat

M.tech.-I, Semester-I

Machine learning (CSCS111) 2024-2025

Lab Assignment 5

Problem statement: Implement a k-NN algorithm from scratch. Explore and optimize critical parameters such as the value of 'k', choice of distance metric (e.g., Euclidean, Manhattan), and the weighting of neighbors. Normalize or standardize the features to ensure the k-NN algorithm functions effectively, as it is sensitive to the scale of the input data. Evaluate model performance.

Dataset: Use Heart Disease Dataset (Classification Task). This dataset contains various patient attributes such as age, gender, blood pressure, cholesterol levels, and others, with the goal of predicting whether or not a patient has heart disease.

Link for dataset: https://archive.ics.uci.edu/dataset/45/heart+disease