Training Day 23 Report

Date: 22 July 2025
Topic: Introduction to K-Nearest Neighbors (KNN) Model

Overview

Today's session provided a brief introduction to the **K-Nearest Neighbors (KNN)** algorithm. It is a simple, supervised machine learning algorithm used for both classification and regression tasks.

Key Points

- **Idea:** KNN makes predictions based on the majority class (for classification) or average value (for regression) of the *k nearest data points* in the feature space.

- **Non-parametric:** It does not assume any prior distribution about the data.

- **Distance Metric:** Commonly uses **Euclidean distance** to find the nearest neighbors.

- **Parameter (k):** Choosing the right value of k is crucial—small k may lead to noise sensitivity, large k may oversimplify.

Learning Outcome

- Understood the basic working principle of the KNN algorithm.

- Learned that KNN is intuitive, easy to implement, and widely used for classification problems.

- Recognized the importance of the distance metric and parameter k in model performance.