Assignment

Implement k-NN classifier For each week, your feature set is (μ, σ) for that week. Use your labels (you will have 52 labels per year for each week) from year 1 to train your classifier and predict labels for year 2.

Questions:

1. take $k = 3, 5, 7, 9, 11$. For each value of k compute the accuracy of your k-NN classifier on year 1 data. On x axis you plot k and on y-axis you plot accuracy. What is the optimal value of k for year 1?

2. use the optimal value of k from year 1 to predict labels for year 2. What is your accuracy?

3. using the optimal value for k from year 1, compute the confusion matrix for year 2

4. what is true positive rate (sensitivity or recall) and true negative rate (specificity) for year 2?

5. implement a trading strategy based on your labels for year 2 and compare the performance with the "buy-and-hold" strategy. Which strategy results in a larger amount at the end of the year?