CENG 463 Homework 5 due on 5th December 2022 at 13.00

Forward Feature Selection

Description:

Implement forward feature selection by using python language. Your implementation should select features by using KNN (K=1). Features should be ordered by showing classification accuracies. Use the **Iris** dataset.

Tasks:

1. Implement (code) forward feature selection with Python. You may use built-in python functions such numpy not SKLearn.
2. Select and order features according to classification accuracies (use cross validation for accuracy computation). The output of FFS function should be the order of features as a list.
3. Compute a matrix including combinations of two-features among all features. The diagonal of this matrix should include individual feature accuracies (i.e. only the first, second, third or fourth).
4. Compare brute-force vs forward feature selection in time and accuracy.

Notes:

Submit your HWs individually. Add your Student ID and your initials such as MT1223456789.ipynb, and put full names & IDs at the top of the file.

Add code comments and discuss your findings in the notebook. Markdowns and discussions should be in English.

Elegant code, useful comments, and extra efforts will be graded handsomely.

Please run your notebooks then save.

You may ask your questions in the lecture on 2nd November.

Good Luck

Dr. Mustafa Teke