PA 2: Classification - Nearest Neighbors

Student Details (1 Point)

Student Name and ID:___ <-- Only this student will submit the assignment

Student Name and ID:___

Notes: When submitting, fill your name and ID in this cell. [1 point]

Do not to forget to cite any external sources used by you.

Programming Assignment Submission Instructions (2 Points)

Step 3: Rename this submission file as 'yourLastName_Last4digitsofyourID_NN.ipynb' [1 point]

Step 4: Place this file inside the folder 'PA#2_Classification_yourLastName' [1 point]

Programming Assignment Details (25 Points)

For this assignment use Jupyter notebook, Panda, and scikit.

1) Load iris dataset from sklearn datasets. [1 points]

2) Split your dataset 70% for training, and 30% for testing the classifier. [2 points]

3) Select only 2 attributes for training and testing your model. [2 points]

4) Use Euclidean distance. [3 points]

5) Test the classifier with three diferent numbers for neighbors and record the results. [3 points]

6) Use comments to explain your code and variable names.[2 points]

7) Calculate and print the confusion matrix, and the classification Report (includes:precision, recall, f1-score, and support) for all three different numbers.[6 points]

8) Plot the classifier in a 2D projection for all three different numbers.[6 points]

Report (20 Points)

For each classification task you need to submit a report (Microsoft Word, or PDF) that you have to:

1) Describe the Nearest Neighbors method, [5 points]

2) Explain what was your criteria for selecting the two attributes, [5 points]

3) Visualizations of the classifier in a 2D projection, for all three different number of neighbors,[5 points]

4) Interprete and compare the results.[5 points]

Do not to forget to cite your sources!

Canvas Submission (2 Points)

Step 5 : Submit your zipped folder containing PA#2_Classification_yourLastName (PA#2_Classification_yourLastName.zip) on Canvas

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