Intelligent Systems Laboratory Examination - End semester - Part 1 - 2023/Apr/26

Instructions: Prepare answers and code for the following questions and perform in the closed book written examination as well as coding laboratory session.

Q1) Perform the following tasks using sklearn library functions:

1) Obtain MNIST digits data set from scikit-learn
2) Create train test partition for 80%-20% ratio
3) Train a decision tree classifier (dt) on the training data
4) Test the classifier on the test set to report accuracy

Q2) Perform the following tasks using sklearn library functions: (Refer to Q1)

1) Perform grid search cross validation using dt as the base estimator for parameter ranges: maximum depth values of 1, 3, 5 and None and criterion as gini, entropy and log loss. Perform 3 fold validation
2) Report best parameters after the exploration
3) Compute accuracy on the test set