CS670/470 Individual Assignment 1

UMass-Boston 9/12/2017

1 Educational Goal

Preliminary understanding of classification workflow in machine learning.

2 Detail

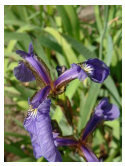
Project goal: Get a head start on how to use existing machine learning libraries to do classification.
Due Date: 4:00 pm, September 21, 2017
Programming language: Python.
Package: scikit-learn.

Iris Data Set:

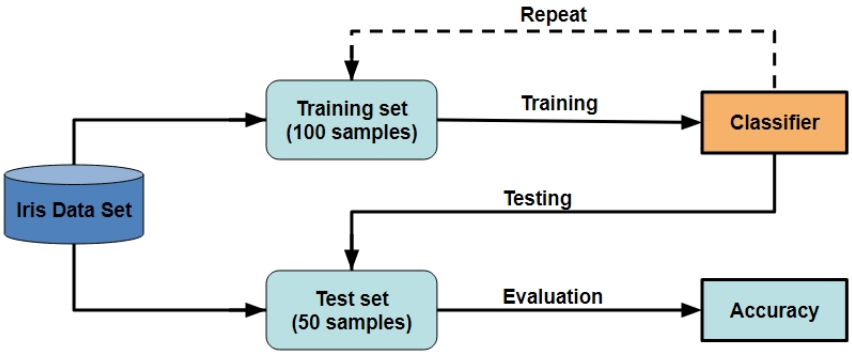
Table 1: Iris Data Set.

Data Set Characteristics: Multivariate	Number of Instances: 150
Associated Tasks: Classification	Number of Attributes: 4
Types of irises:	Setosa, Versicolour, and Virginica.
Features of irises:	Sepal Length, Sepal Width, Petal Length and Petal Width.
Wikipedia:	https://en.wikipedia.org/wiki/Iris_flower_data_set

3 Class label

Setosa:  **Versicolour:**  **Virginica:** 

4 Approach



Step 1. Load iris data and construct the training set, testing set: Use "$sklearn.datasets.load\_iris$" to load the iris data set. Then split it into 2 parts (100 samples for training and 50 for testing) for your experiments.

Step 2. Create your KNN classifier and train it on the training set: Create your KNN classifier and use the training set you got in step 1 to train your classifier.

Step 3. Test your classifier on the test set and get your evaluation results: After training, use the test set to evaluate your classifier's performance (accuracy).

Step 4. (Optional): Use any plot you want to show your classification results. (bonus points possible!)

5 Classifier

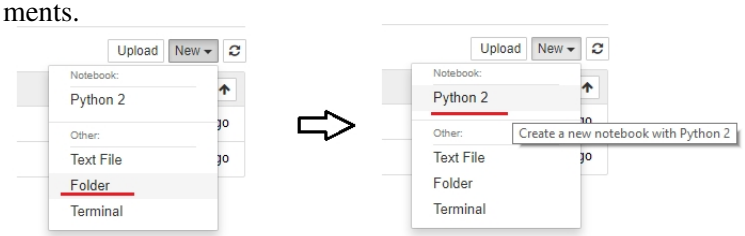
K-Nearest Neighbor: http://scikit-learn.org/stable/modules/generated/sklearn.neighbors.KNeighborsClassifier.html

6 Python Server

URL: http://craterdetect.cs.umb.edu:443/tree/workspace/workspace/CS670

password: crime

Create your own folder under the CS670 folder, and then create your own Python2 file for your experiments.



7 Submission Requirements

1. Brief description of what is classification in machine learning.

2. Write an experiment report to discuss your experimental results.

3. Only soft copy is required. Submit the soft copy of the report through your UMassOnline account.