ML-OPS
4- Assignment
Readme File

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Questions 7: write the performance metrics from step 3 in the readme.md. in following format run svm decision tree.

Answer:

1.
```
Import from sklearn import tree
clf = tree.DecisionTreeClassifier()
```

2. **Split train, test and validation data set in 5 different and set hyper-parameter turning for both the classifiers**

```
def h_param_tuning(h_param_comb, clf, x_train, y_train, x_dev, y_dev, metric, verbose=False):
    best_metric = -1.0
    best_model = None
    best_h_params = None
    for cur_h_params in h_param_comb:
        hyper_params = cur_h_params
        clf.set_params(**hyper_params)
        clf.fit(x_train, y_train)
        predicted_dev = clf.predict(x_dev)
        cur_metric = metric(y_pred=predicted_dev, y_true=y_dev)
        if cur_metric > best_metric:
            best_metric = cur_metric
            best_model = clf
            best_h_params = cur_h_params
            if verbose:
                print("Found new best metric with :" + str(cur_h_params))
                print("New best val metric:" + str(cur_metric))
    return best_model, best_metric, best_h_params
```

3. **mean and standard deviations of both the classifier's performances**
   Using pandas' data frame, I computed mean and standard deviation.

   SVM:
   Mean: 0.991051
   Standard Deviation: 0.003058

   Decision Tree:
   Mean: 0.8413
   Standard Deviation: 0.018779

4. **Model Comparison:**

5. **Identify if there is more to the classifier comparison than just the numbers? -- Can you somehow compare the predicted labels**