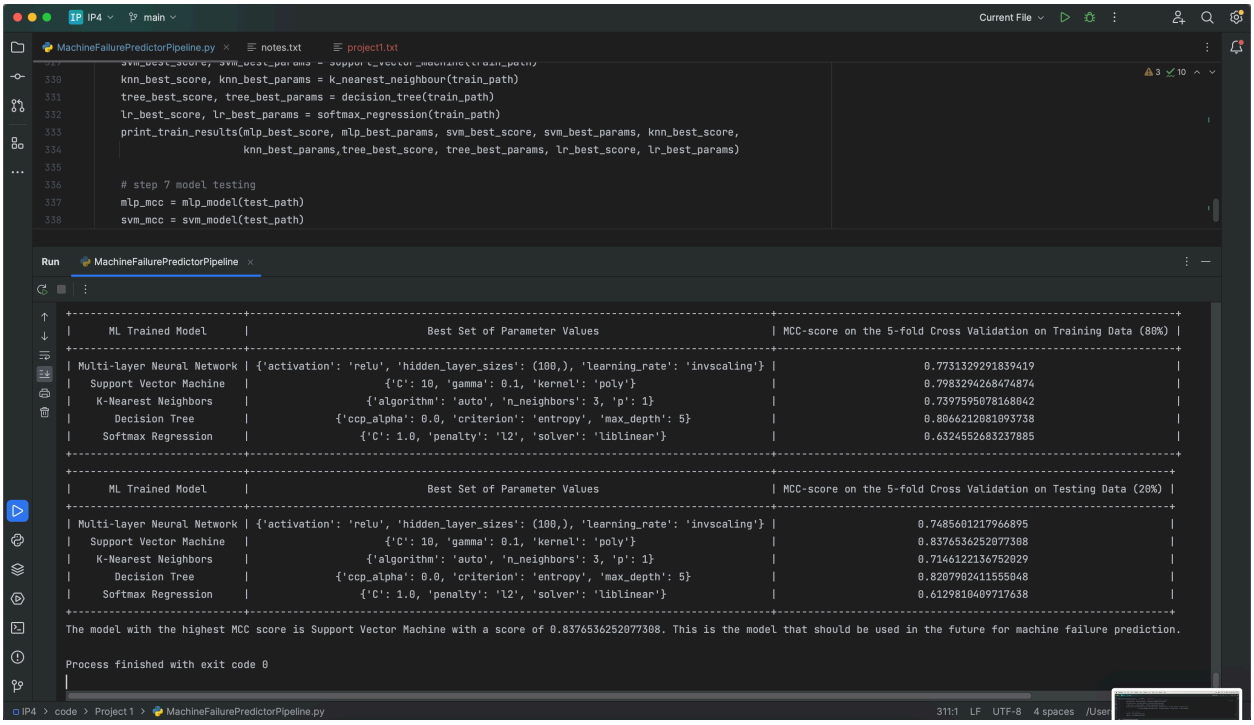
IP4
main
Current File
MachineFailurePredictorPipeline.py
notes.txt
project1.txt
knn_best_score, knn_best_params = k_nearest_neighbour(train_path)
tree_best_score, tree_best_params = decision_tree(train_path)
lr_best_score, lr_best_params = softmax_regression(train_path)
print_train_results(mlp_best_score, mlp_best_params, svm_best_score, svm_best_params, knn_best_score,
knn_best_params,tree_best_score, tree_best_params, lr_best_score, lr_best_params)
# step 7 model testing
mlp_mcc = mlp_model(test_path)
svm_mcc = svm_model(test_path)
Run
MachineFailurePredictorPipeline
ML Trained Model	Best Set of Parameter Values	MCC-score on the 5-fold Cross Validation on Training Data (80%)
Multi-layer Neural Network	{'activation': 'relu', 'hidden_layer_sizes': (100,), 'learning_rate': 'invscaling'}	0.7731329291839419
Support Vector Machine	{'C': 10, 'gamma': 0.1, 'kernel': 'poly'}	0.7983294268474874
K-Nearest Neighbors	{'algorithm': 'auto', 'n_neighbors': 3, 'p': 1}	0.7397595078168042
Decision Tree	{'ccp_alpha': 0.0, 'criterion': 'entropy', 'max_depth': 5}	0.8066212081093738
Softmax Regression	{'C': 1.0, 'penalty': 'l2', 'solver': 'liblinear'}	0.6324552683237885
ML Trained Model	Best Set of Parameter Values	MCC-score on the 5-fold Cross Validation on Testing Data (20%)
Multi-layer Neural Network	{'activation': 'relu', 'hidden_layer_sizes': (100,), 'learning_rate': 'invscaling'}	0.7485601217966895
Support Vector Machine	{'C': 10, 'gamma': 0.1, 'kernel': 'poly'}	0.8376536252077308
K-Nearest Neighbors	{'algorithm': 'auto', 'n_neighbors': 3, 'p': 1}	0.7146122136752029
Decision Tree	{'ccp_alpha': 0.0, 'criterion': 'entropy', 'max_depth': 5}	0.8207982411555048
Softmax Regression	{'C': 1.0, 'penalty': 'l2', 'solver': 'liblinear'}	0.6129810409717638
The model with the highest MCC score is Support Vector Machine with a score of 0.8376536252077308. This is the model that should be used in the future for machine failure prediction.
Process finished with exit code 0
IP4 > code > Project 1 > MachineFailurePredictorPipeline.py
311:1 LF UTF-8 4 spaces