DL project1

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1 Introduction

Parameters	Train Accuracy	Validation Accuracy
C: 10, gamma: 1	**0.97911213**	**0.97911227**
C: 10, gamma: 0.1	0.97411213	0.97911227
C: 10, gamma: 0.5	0.97711616	0.97911227
C: 12, gamma: 1	0.97111517	0.97911227
C: 12, gamma: 0.1	0.97811413	0.97911227
C: 12, gamma: 0.5	0.97910319	0.97911227

Table 1: Accuracy scores of SVM classifier on *tictac_final* dataset. All the accuracies are reported based on the mean score of 10 fold cross validation

Parameters	Train Accuracy	Validation Accuracy
C: 10, gamma: 1	**0.39571671**	**0.39026718**
C: 10, gamma: 0.1	0.39571671	0.39026718
C: 10, gamma: 0.5	0.39571671	0.39026718
C: 12, gamma: 1	0.39601357	0.39001318
C: 12, gamma: 0.1	0.39601357	0.39001318
C: 12, gamma: 0.5	0.39601357	0.39001318

Table 2: Accuracy scores of SVM classifier on *tictac_single* dataset. All the accuracies are reported based on the mean score of 10 fold cross validation

Parameters	Validation Accuracy
activation: relu, hidden_layer_sizes: $(100, 100)$	0.99086162
activation: relu, hidden_layer_sizes: $(120, 120)$	**0.9921671**
activation: relu, hidden_layer_sizes: $(150, 150)$	0.99086162
activation: relu, hidden_layer_sizes: $(200, 200)$	0.99086162

Table 3: Accuracy scores of MLP classifier on *tictac_final* dataset. All the accuracies are reported based on the mean score of 10 fold cross validation

Parameters	Validation Accuracy
activation: relu, hidden_layer_sizes: $(100, 100)$	0.92919847
activation: relu, hidden_layer_sizes: $(120, 120)$	0.93148855
activation: relu, hidden_layer_sizes: $(150, 150)$	0.93110687
activation: relu, hidden_layer_sizes: $(200, 200)$	**0.93263359**

Table 4: Accuracy scores of SVM classifier on *tictac_single* dataset. All the accuracies are reported based on the mean score of 10 fold cross validation
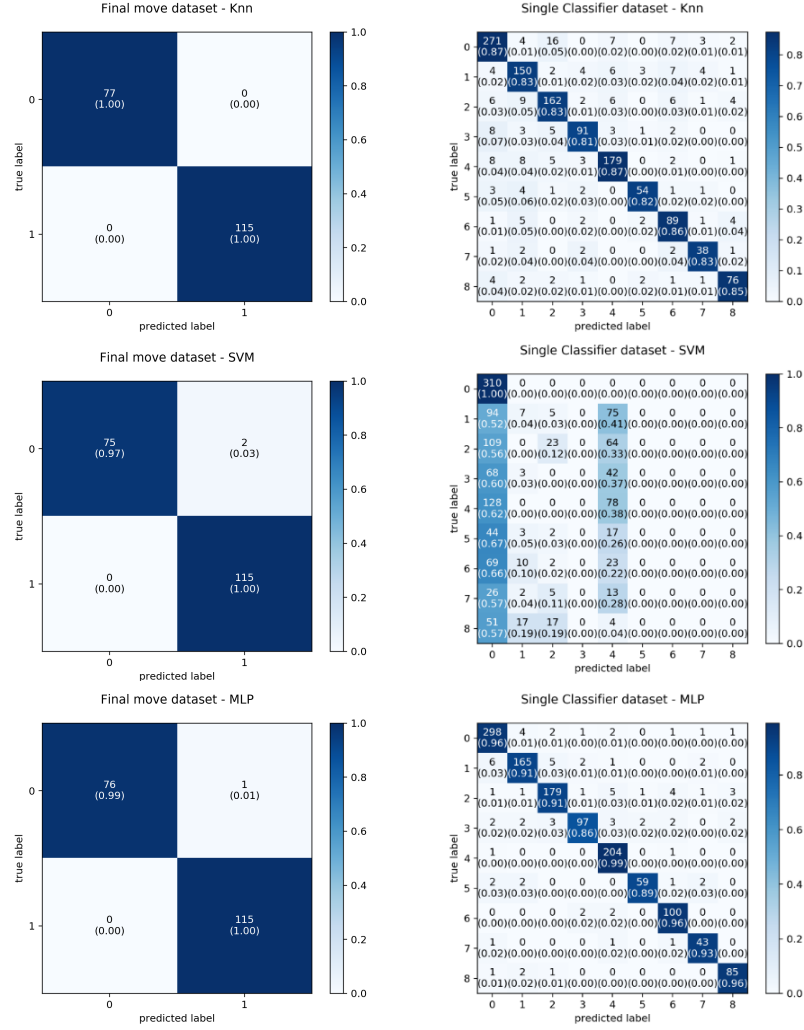
Figure 1: Confusion Matrices of the *tictac_final* and *tictac_single* datasets
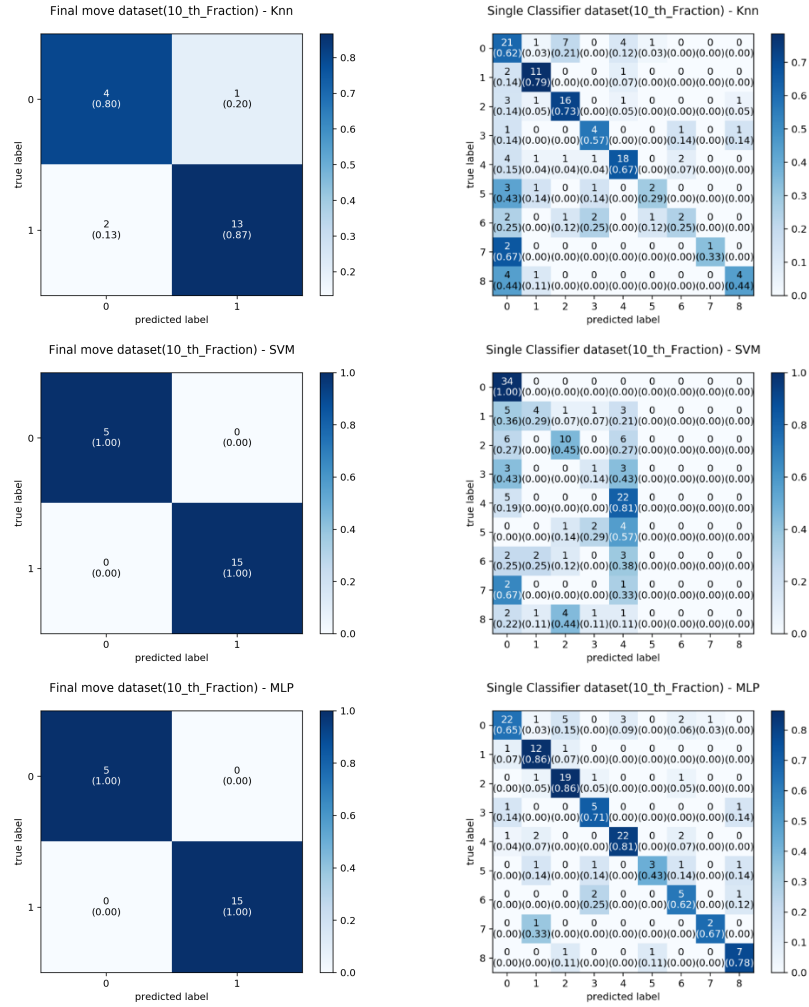
Figure 2: Confusion Matrices of $1/10^{th}$ the $tictac\_final$ and $tictac\_single$ datasets
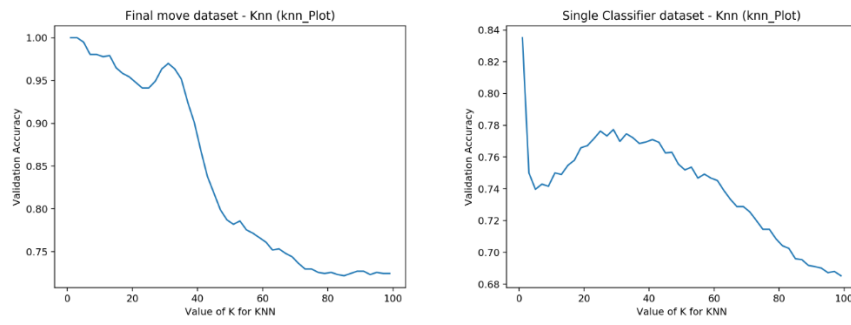
Figure 3: (Left to Right) K values vs validation accuracy plot of the knn classifiers of *tictac_final* and *tictac_single* datasets