

Part 2

Q Provide each configuration plot

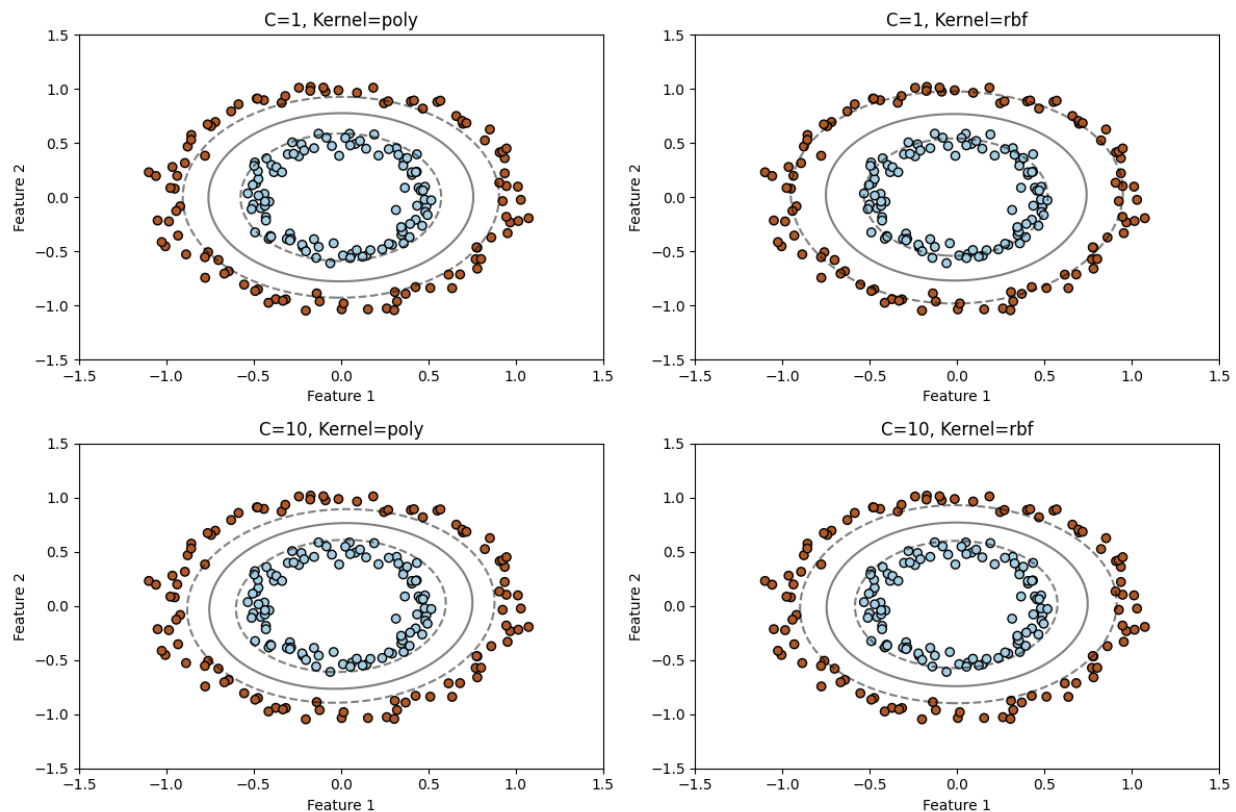


Figure 1 4 plots with decision boundaries of dataset 1

Q. provide all cross-validation procedure results for hyperparameter values as a table for dataset 2

C	Kernal	Mean accuracy	Standard Deviation
0.1	Linear	0.870	0.009
0.1	Radial Basis Function	0.829	0.010

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0.1	Polynomial	0.754	0.006
1	Linear	0.952	0.009
1	Radial Basis Function	0.918	0.010
1	Polynomial	0.874	0.009
10	Linear	0.954	0.007
10	Radial Basis Function	0.941	0.008
10	Polynomial	0.925	0.010

Best Hyperparameter configuration: C=10, Kernal=Linear

Part 3

Q. Please compare all methods with respect to their accuracy and F1 scores separately.

SVM Results:

Accuracy: 0.750 +/- 0.034

F1 Score: 0.834 +/- 0.027

KNN Results:

Accuracy: 0.717 +/- 0.031

F1 Score: 0.809 +/- 0.023

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Random Forest Results:

Accuracy: 0.752 +/- 0.022

F1 Score: 0.839 +/- 0.016

Decision Tree Results:

Accuracy: 0.686 +/- 0.045

F1 Score: 0.777 +/- 0.042

Best method is Random Forest