

# Results

## K-Nearest Neighbors Classification

K-Nearest Neighbors Classification

Nearest neighbors Weights		Distance	n(Train)	n(Validation)	n(Test)	Validation Accuracy	Test Accuracy
1	rectangular	Euclidean	761	191	238	0.806	0.845

Note. The model is optimized with respect to the *validation set accuracy*.

### Data Split



Confusion Matrix

		Predicted	
		0	1
Observed	0	99	20
	1	17	102

Model Performance Metrics

	0	1	Average / Total
Support	119	119	238
Accuracy	0.845	0.845	0.845
Precision (Positive Predictive Value)	0.853	0.836	0.845
Recall (True Positive Rate)	0.832	0.857	0.845
False Positive Rate	0.143	0.168	0.155
False Discovery Rate	0.147	0.164	0.155
F1 Score	0.843	0.846	0.845
Matthews Correlation Coefficient	0.689	0.689	0.689
Area Under Curve (AUC)	0.845	0.845	0.845
Negative Predictive Value	0.836	0.853	0.845
True Negative Rate	0.857	0.832	0.845
False Negative Rate	0.168	0.143	0.155
False Omission Rate	0.164	0.147	0.155
Threat Score	1.833	1.789	1.811
Statistical Parity	0.487	0.513	1.000

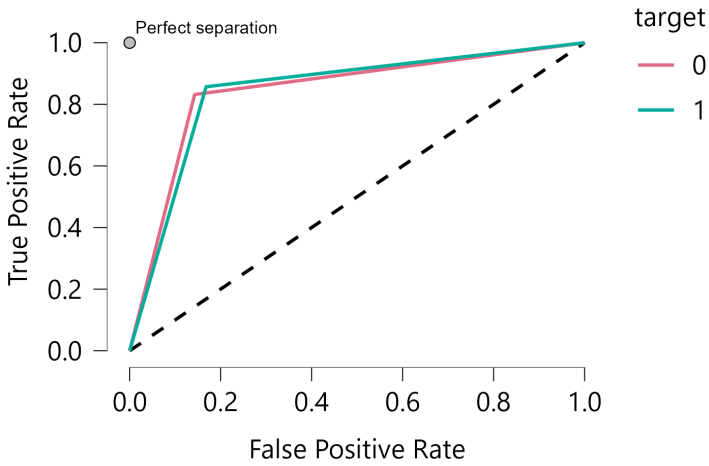
Note. All metrics are calculated for every class against all other classes.

Feature Importance Metrics

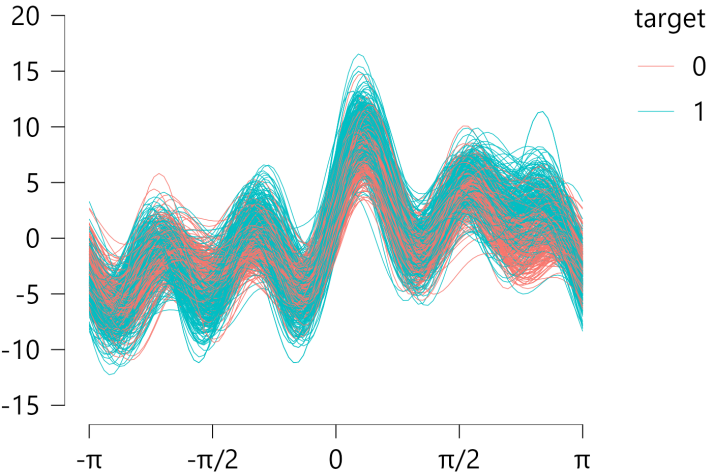
	Mean dropout loss
ST slope	0.114
sex	0.084
chest pain type	0.084
resting ecg	0.082
exercise angina	0.082
age	0.071
fasting blood sugar	0.060
oldpeak	0.060
cholesterol	0.058
resting bp s	0.052
max heart rate	0.046

Note. Mean dropout loss is based on 50 permutations.

ROC Curves Plot

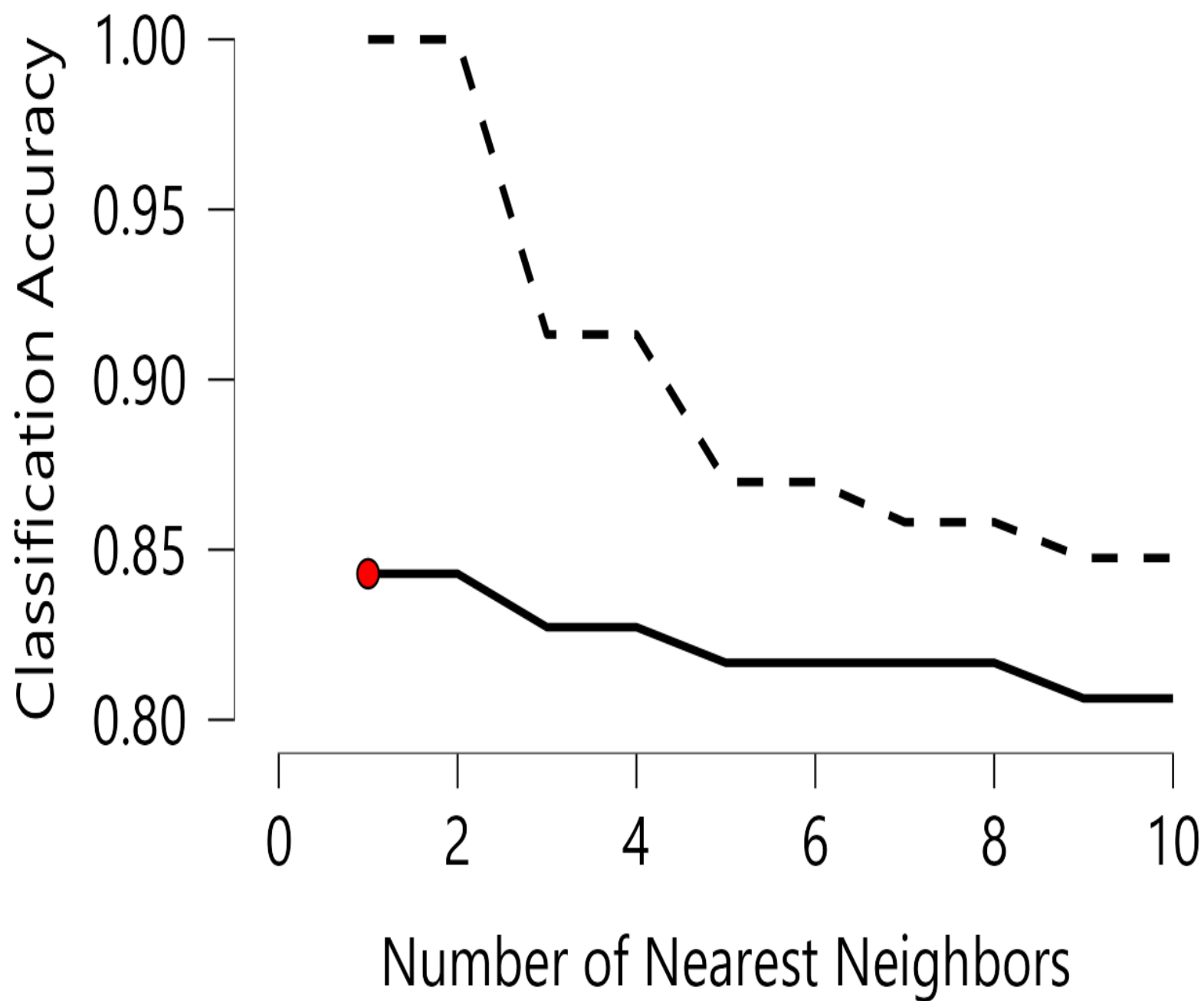


Andrews Curves Plot

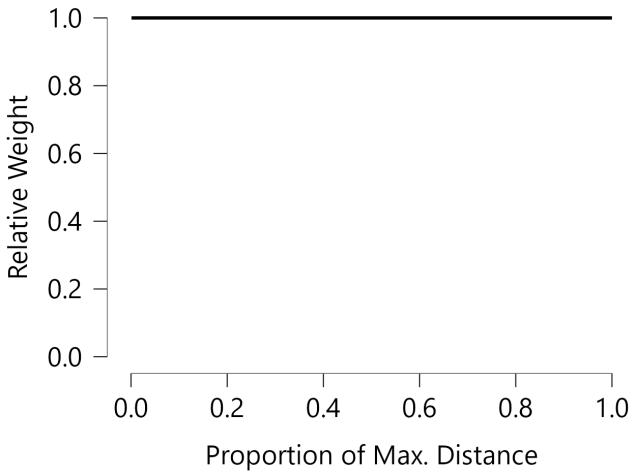


Classification Accuracy Plot

- - Training set — Validation set



**Rectangular Weight Function**



Decision Boundary Matrix

