

Wine Project Report

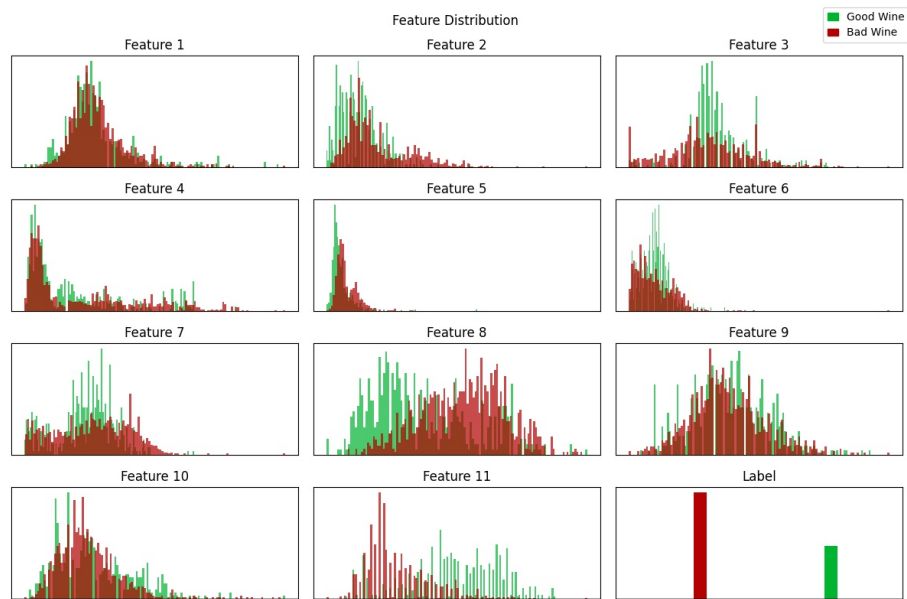
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1 Preliminary Data Analysis

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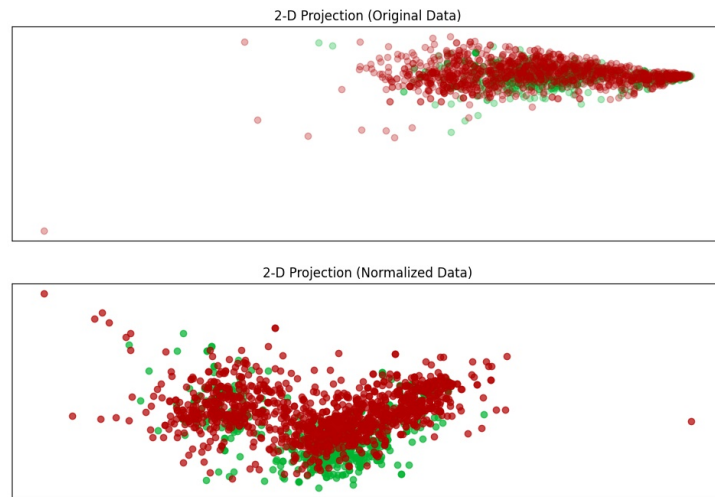


Table 1: MVG

π_T	PCA	Error Rate	DCF_{norm}
0.5	5	17.618%	0.352
0.5	8	18.606%	0.372
0.5	7	18.606%	0.372
0.5	9	18.771%	0.375
0.5	6	19.100%	0.382
0.5	10	20.252%	0.405
0.6	5	16.850%	0.421
0.6	8	17.234%	0.431
0.6	7	17.563%	0.439
0.6	9	17.673%	0.442

Table 2: Naive Bayes MVG

π_T	PCA	Error Rate	DCF_{norm}
0.5	6	19.978%	0.400
0.5	5	20.143%	0.403
0.5	7	20.362%	0.407
0.5	9	20.472%	0.409
0.5	8	20.582%	0.412
0.5	10	22.832%	0.457
0.6	7	18.332%	0.458
0.6	9	18.496%	0.462
0.6	5	18.771%	0.469
0.6	8	18.825%	0.471

Table 3: Tied Covariance MVG

π_T	PCA	Error Rate	DCF_{norm}
0.5	8	16.301%	0.326
0.5	7	16.465%	0.329
0.5	10	16.905%	0.338
0.5	9	17.069%	0.341
0.5	6	17.783%	0.356
0.5	5	17.947%	0.359
0.6	9	15.038%	0.376
0.6	10	15.258%	0.381
0.6	8	15.368%	0.384
0.6	7	16.356%	0.409

Table 4: MVG (Normalized Samples)

π_T	PCA	Error Rate	DCF_{norm}
0.5	10	20.198%	0.404
0.5	8	20.527%	0.411
0.5	7	20.527%	0.411
0.5	9	20.637%	0.413
0.5	5	21.515%	0.430
0.5	6	21.734%	0.435
0.6	7	17.947%	0.449
0.6	10	18.441%	0.461
0.6	9	18.551%	0.464
0.6	8	18.551%	0.464

Table 5: Naive Bayes MVG (Normalized Samples)

π_T	PCA	Error Rate	DCF_{norm}
0.5	7	20.472%	0.409
0.5	6	20.966%	0.419
0.5	8	21.131%	0.423
0.5	9	21.405%	0.428
0.5	5	21.734%	0.435
0.5	10	21.899%	0.438
0.5	4	23.381%	0.468
0.6	8	18.880%	0.472
0.6	9	19.649%	0.491
0.5	3	24.698%	0.494

Table 6: Tied Covariance MVG (Normalized Samples)

π_T	PCA	Error Rate	DCF_{norm}
0.5	9	16.465%	0.329
0.5	10	16.575%	0.332
0.5	7	16.905%	0.338
0.5	8	17.124%	0.342
0.5	6	17.947%	0.359
0.6	10	14.764%	0.369
0.6	9	14.764%	0.369
0.5	5	18.496%	0.370
0.6	7	15.752%	0.394
0.6	8	15.917%	0.398

Table 7: Kernel SVM

Bias	γ	C	Error Rate
0	5	0.1	27.168%
0	5	1.0	27.168%
0	10	0.1	27.442%
0	10	1.0	27.442%
1.0	5	0.1	36.443%
1.0	5	1.0	36.443%
1.0	10	0.1	36.443%
1.0	10	1.0	36.443%

Table 8: Kernel SVM With PCA

Bias	γ	C	PCA	Error Rate
0	5	0.1	10	27.168%
0	5	0.1	9	27.168%
0	5	0.1	8	27.168%
0	5	0.1	7	27.168%
0	5	0.1	6	27.168%
0	5	1	10	27.168%
0	5	1	9	27.168%
0	5	1	8	27.168%
0	5	1	7	27.168%
0	5	1	6	27.168%

Table 9: Kernel SVM With PCA and Z-Normalization

Bias	γ	C	PCA	Error Rate
0	0.3	1	9	13.172%
0	0.5	0.5	9	13.172%
0	0.3	1	8	13.282%
0	0.5	1	9	13.282%
0.1	0.3	1	8	13.337%
0.1	0.5	1	9	13.337%
0	0.3	0.5	9	13.447%
0	0.3	1	10	13.447%
0	0.5	1	10	13.502%
0	0.1	1	9	13.557%