

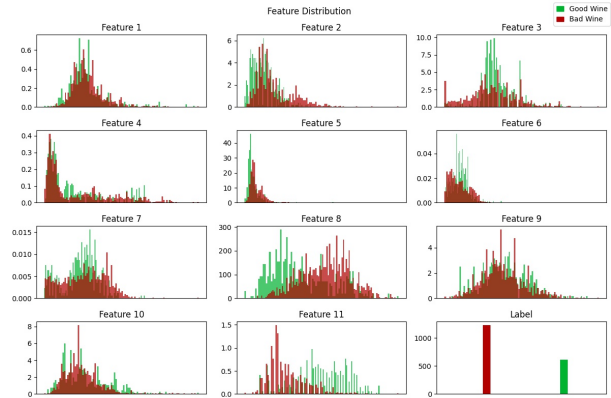
Wine Project Report

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1 Preliminary Data Analysis

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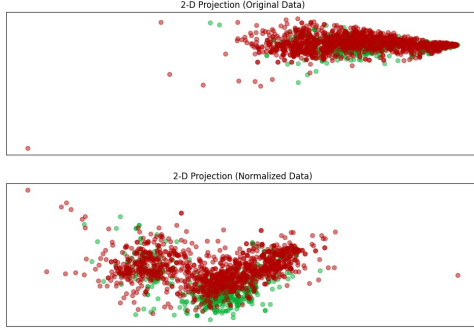


Table 1: MVG

π_T	PCA	Error Rate	DCF_{min}
0.7	8	16.803%	0.168
0.7	9	17.074%	0.171
0.6	9	17.183%	0.172
0.6	8	17.401%	0.174
0.7	7	17.510%	0.175
0.8	10	17.781%	0.178
0.7	10	17.836%	0.178
0.6	7	17.945%	0.179
0.5	9	18.162%	0.182
0.5	8	18.216%	0.182

Table 2: Naive Bayes MVG

π_T	PCA	Error Rate	DCF_{min}
0.7	9	18.597%	0.186
0.7	8	18.651%	0.187
0.8	10	19.195%	0.192
0.7	7	19.358%	0.194
0.7	6	19.413%	0.194
0.6	7	19.467%	0.195
0.6	5	19.521%	0.195
0.6	8	19.685%	0.197
0.8	8	19.739%	0.197
0.8	9	19.739%	0.197

Table 3: Tied Covariance MVG

π_T	PCA	Error Rate	DCF_{min}
0.5	9	17.346%	0.173
0.5	10	17.346%	0.173
0.6	7	18.380%	0.184
0.6	9	18.380%	0.184
0.6	10	18.380%	0.184
0.5	8	18.488%	0.185
0.5	7	18.651%	0.187
0.6	8	18.651%	0.187
0.7	7	19.304%	0.193
0.7	10	19.304%	0.193

Table 4: MVG (Normalized Samples)

π_T	PCA	Error Rate	DCF_{min}
0.5	6	13.859%	0.277
0.5	10	14.946%	0.299
0.5	7	15.761%	0.315
0.5	9	15.761%	0.315
0.5	8	17.391%	0.348
0.5	6	18.750%	0.375
0.5	9	18.750%	0.375
0.5	7	19.022%	0.380
0.5	5	19.565%	0.391
0.5	8	20.109%	0.402

Table 5: Naive Bayes MVG (Normalized Samples)

π_T	PCA	Error Rate	DCF_{min}
0.5	9	17.120%	0.342
0.5	10	17.391%	0.348
0.5	6	17.935%	0.359
0.5	7	18.478%	0.370
0.5	8	18.478%	0.370
0.5	4	21.467%	0.429
0.5	8	22.283%	0.446
0.5	7	22.826%	0.457
0.5	5	22.826%	0.457
0.5	6	23.098%	0.462

Table 6: Tied Covariance MVG (Normalized Samples)

π_T	PCA	Error Rate	DCF_{min}
0.5	6	10.326%	0.207
0.5	10	10.598%	0.212
0.5	9	10.870%	0.217
0.5	7	11.141%	0.223
0.5	4	12.228%	0.245
0.5	5	13.043%	0.261
0.5	8	13.043%	0.261
0.5	9	16.848%	0.337
0.5	10	16.848%	0.337
0.5	10	18.529%	0.371

Bias	γ	C	Error Rate
0	5	0.1	27.168%
0	5	1.0	27.223%
0	10	0.1	27.442%
0	10	1.0	27.497%
1.0	5	1.0	36.004%
1.0	10	1.0	36.114%
1.0	5	0.1	36.443%
1.0	10	0.1	36.443%

Table 7: Kernel SVM

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	1	8	27.168%
0	5	1	10	27.223%
0	5	1	9	27.223%
0	10	0.1	8	27.387%
0	10	1	8	27.387%
0	10	0.1	10	27.442%
0	10	0.1	9	27.442%

Table 8: Kernel SVM With PCA

Bias	γ	C	PCA	Error Rate
0	0.5	1	9	13.282%
0.1	0.5	1	9	13.337%
0	0.5	1	10	13.502%
0	0.1	1	9	13.557%
0	0.1	1	10	13.776%
0.1	0.1	1	10	13.776%
0.1	0.5	1	10	13.776%
0.1	0.1	1	9	13.886%
0.1	0.5	1	8	13.996%
0	0.1	1	8	14.050%

Table 9: Kernel SVM With PCA and Z-Normalization