

# Wine Project Report

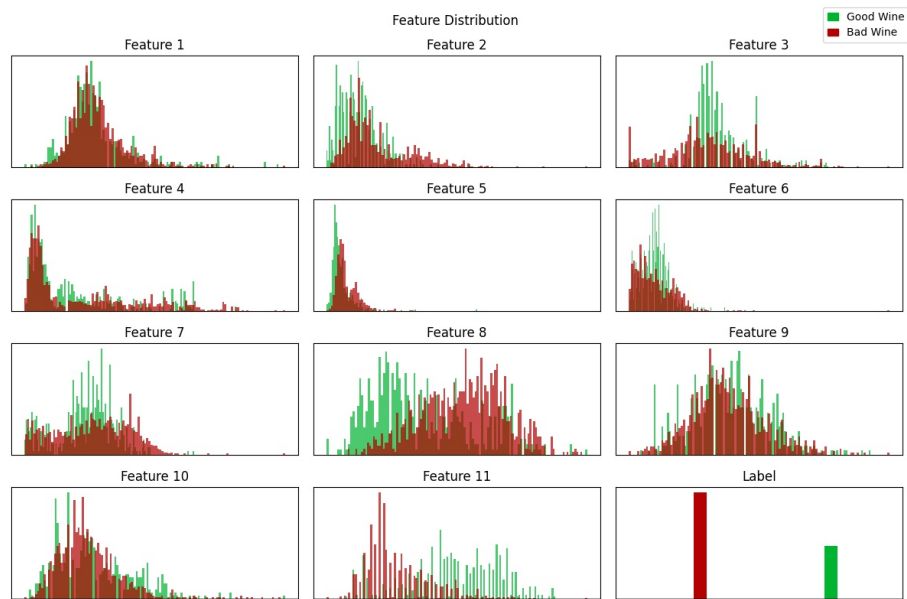
Ruggero Nocera (SXXXXXX)  
Quarta Matteo (SXXXXXX)

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## 1 Preliminary Data Analysis

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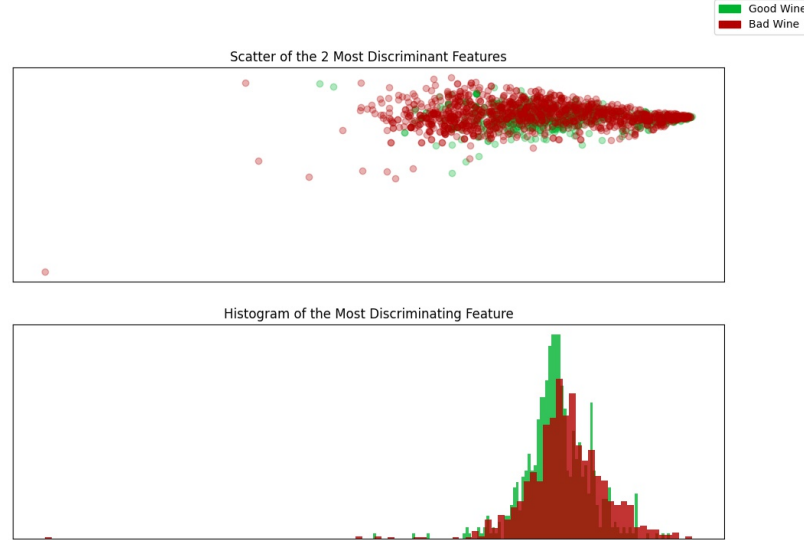


Table 4: Kernel SVM

Bias	$\gamma$	$C$	Error Rate
0	1	0.1	27.113%
0	1	0.5	27.113%
0	1	1	27.113%
0	5	0.1	27.168%
0	5	0.5	27.168%
0	5	1	27.168%
0	10	0.1	27.442%
0	10	0.5	27.442%
0	10	1	27.442%
5.0	1	0.1	36.443%
5.0	1	0.5	36.443%
5.0	1	1	36.443%
5.0	5	0.1	36.443%
5.0	5	0.5	36.443%
5.0	5	1	36.443%
5.0	10	0.1	36.443%
5.0	10	0.5	36.443%

5.0	10	1	36.443%
10.0	1	0.1	36.443%
10.0	1	0.5	36.443%
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10.0	10	0.1	36.443%
10.0	10	0.5	36.443%
10.0	10	1	36.443%

Table 5: Logistic Regression

$\lambda$	Error Rate
0	16.026%
1e-09	16.081%
1e-06	16.081%
0.001	15.587%
0.1	18.057%

Table 6: Linear SVM

Bias	$C$	Error Rate
0	0.1	17.728%
0	1	16.520%
1	0.1	35.565%
1	1	38.090%
5.0	0.1	15.862%
5.0	1	47.805%
10.0	0.1	15.642%
10.0	1	16.081%

Table 1: MVG

$\pi_T$	PCA	Error Rate
0.7	1	39.846%
0.8	2	39.791%
0.8	1	38.090%
0.9	3	38.639%
0.9	2	38.145%
0.9	1	36.663%

Table 2: Naive Bayes

$\pi_T$	PCA	Error Rate
0.7	1	39.846%
0.8	2	39.188%
0.8	1	38.090%
0.9	4	39.462%
0.9	3	37.925%
0.9	2	37.596%
0.9	1	36.663%

Table 3: Tied Covariance

$\pi_T$	PCA	Error Rate
0.6	1	36.498%
0.7	3	38.858%
0.7	2	38.310%
0.7	1	36.443%
0.8	3	36.608%
0.8	2	36.553%
0.8	1	36.443%
0.9	6	39.956%
0.9	5	37.870%
0.9	4	38.310%
0.9	3	36.443%
0.9	2	36.443%
0.9	1	36.443%