

CLASSIFICATION ASSIGNMENT

Decision Tree Classification																		
Sino	criterion	splitter	max_features	precision				recall				f1-score				support		Accuracy
				0	1	Macro ave	Weighted avg	0	1	Macro ave	Weighted avg	0	1	Macro ave	Weighted avg			
1	gini	best	sqrt	0.88	0.97	0.92	0.94	0.96	0.91	0.94	0.93	0.92	0.94	0.93	0.93	51	82	0.93
2	gini	best	log2	0.93	1.00	0.96	0.97	1	0.95	0.98	0.97	0.96	0.97	0.97	0.97	51	82	0.97
3	gini	best	auto	0.88	0.97	0.92	0.94	0.96	0.91	0.94	0.93	0.92	0.94	0.93	0.93	51	82	0.93
4	gini	random	sqrt	0.96	1.00	0.98	0.99	1	0.98	0.99	0.98	0.98	0.99	0.98	0.98	51	82	0.98
5	gini	random	log2	0.94	0.93	0.93	0.93	0.88	0.96	0.92	0.93	0.91	0.95	0.93	0.93	51	82	0.93
6	gini	random	auto	0.96	1	0.98	0.99	1	0.98	0.99	0.98	0.98	0.99	0.98	0.99	51	82	0.98
1	entropy	best	sqrt	0.88	0.97	0.92	0.94	0.96	0.91	0.94	0.93	0.92	0.94	0.93	0.93	51	82	0.93
2	entropy	best	log2	0.96	0.99	0.97	0.98	0.98	0.98	0.98	0.98	0.97	0.98	0.98	0.98	51	82	0.98
3	entropy	best	auto	0.88	0.97	0.92	0.94	0.96	0.91	0.94	0.93	0.92	0.94	0.93	0.93	51	82	0.93
4	entropy	random	sqrt	0.96	1	0.98	0.99	1	0.98	0.99	0.98	0.98	0.99	0.98	0.99	51	82	0.98
5	entropy	random	log2	0.93	0.99	0.96	0.96	0.88	0.95	0.97	0.96	0.95	0.97	0.96	0.96	51	82	0.96
6	entropy	random	auto	0.96	1	0.98	0.99	1	0.98	0.99	0.98	0.98	0.99	0.98	0.99	51	82	0.98

The f1_macro value for best parameter {'criterion': 'gini', 'max_features': 'sqrt', 'splitter': 'best'}: 0.98

Random Forest Classification																		
Sino	criterion	n-estimators	max_features	precision				recall				f1-score				support		Accuracy
				0	1	Macro ave	Weighted avg	0	1	Macro ave	Weighted avg	0	1	Macro ave	Weighted avg			
1	gini	10	sqrt	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
2	gini	10	log2	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
3	gini	10	auto	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.98	51	82	0.98
4	gini	100	sqrt	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
5	gini	100	log2	0.98	1	0.99	0.99	1	0.99	0.99	0.99	0.99	0.99	0.99	0.99	51	82	0.99
6	gini	100	auto	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
1	entropy	10	sqrt	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
2	entropy	10	log2	0.98	1	0.99	0.99	1	0.99	0.98	0.98	0.99	0.99	0.99	0.99	51	82	0.99
3	entropy	10	auto	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
4	entropy	100	sqrt	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98
5	entropy	100	log2	0.98	1	0.99	0.99	1	0.99	0.99	0.99	0.99	0.99	0.99	0.99	51	82	0.99
6	entropy	100	auto	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.99	0.98	0.98	51	82	0.98

The f1_macro value for best parameter {'criterion': 'gini', 'max_features': 'log2', 'n_estimators': 100}: 0.98