Results with the entire data

0 : Non-Fraudulent transactions
1 : Fraudulent transactions

TABLE I

Metrics	Decision Tree - Entropy		Decision Tree - Gini		Random Forest		XGBoost		Logistic Regression		KNN		GaussianNB	
	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data
Precision	'0' : 1.00 '1' : 0.96	0' : 1.00 '1' : 0.83	0' : 1.00 '1' : 0.91	0' : 1.00 '1' : 0.75	0' : 1.00 '1' : 1.00	'0' : 1.00 '1' : 0.92	'0' : 1.00 '1' : 0.96	'0' : 1.00 '1' : 0.84	'0' : 1.00 '1' : 0.91	'0' : 1.00 '1' : 0.77	'0' : 1.00 '1' : 0.93	'0' : 1.00 '1' : 0.79	'0' : 1.00 '1' : 0.06	'0' : 1.00 '1' : 0.06
Recall	'0' : 1.00 '1' : 0.82	0' : 1.0 '1' : 0.71	0' : 1.00 '1' : 0.74	0' : 1.00 '1' : 0.61	0' : 1.00 '1' : 0.98	0' : 1.00 '1' : 0.70	'0' : 1.00 '1' : 0.85	'0' : 1.00 '1' : 0.76	'0' : 1.00 '1' : 0.68	'0' : 1.00 '1' : 0.60	'0' : 1.00 '1' : 0.77	'0' : 1.00 '1' : 0.69	'0' : 0.98 '1' : 0.84	'0' : 0.98 '1' : 0.80
Cross validation Score	Model Accuracy : 0.9994645488448711 Model Standard Accuracy : 0.00010533040211414862		Model Accuracy : 0.9993504373362601 Model Standard Accuracy : 0.00012840062659716383		Model Accuracy : 0.9995611055221414 Model Standard Accuracy : 7.07664458042615e-05		Model Accuracy : 0.9995040489009813 Model Standard Accuracy : 8.338791153249806e-05		Model Accuracy : 0.9992933789814249 Model Standard Accuracy : 0.00010283687822386742		Model Accuracy : 0.9994601596072815 Model Standard Accuracy : 9.625504752891523e-05		Model Accuracy : 0.9785292717717397 Model Standard Accuracy : 0.0008201346202763634	
AUC	0.92		0.89		0.97		0.97		0.97		0.90		0.95	

Results for the reduced data

TABLE II

Metrics	Decision Tree - Entropy		Decision Tree - Gini		Random Forest		XGBoost		Logistic Regression		KNN		GaussianNB	
	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data	Train Data	Test Data
Precision	'0' : 0.99	'0' : 0.93	'0' : 0.96	'0' : 0.92	'0' : 0.99	'0' : 0.93	'0' : 1.00	'0' : 0.92	'0' : 0.95	'0' : 0.92	'0' : 0.94	'0' : 0.92	'0' : 0.93	'0' : 0.92
	'1' : 0.98	'1' : 0.78	'1' : 0.99	'1' : 0.89	'1' : 1.00	'1' : 1.00	'1' : 1.00	'1' : 0.96	'1' : 0.97	'1' : 0.92	'1' : 1.00	'1' : 0.96	'1' : 0.95	'1' : 0.96
Recall	'0' : 0.99	'0' : 0.89	'0' : 1.00	'0' : 0.95	'0' : 1.00	'0' :1.00	'0' : 1.00	'0' : 0.98	'0' : 0.99	'0' : 0.97	'0' : 1.00	'0' : 0.98	'0' : 0.98	'0' : 98
	'1' : 0.97	'1' : 0.86	'1' : 0.91	'1' : 0.83	'1' : 0.97	'1' : 0.83	'1' : 1.00	'1' : 0.83	'1' : 0.89	'1' : 0.83	'1' : 0.85	'1' : 0.83	'1' : 0.82	'1' : 0.83
Cross validation Score	Model Accuracy : 0.9285166745693061 Model Standard Accuracy : 0.04303361794831631		Model Accuracy : 0.9396277856804172 Model Standard Accuracy : 0.038276650515041824		Model Accuracy : 0.9368500079026394 Model Standard Accuracy : 0.03883023568997991		Model Accuracy : 0.9478860439386754 Model Standard Accuracy : 0.03333338790047097		Model Accuracy : 0.9451082661608977 Model Standard Accuracy : 0.029850246485569245		Model Accuracy : 0.9534415994942311 Model Standard Accuracy : 0.032280188305089774		Model Accuracy : 0.9259562193772719 Model Standard Accuracy : 0.02900723782548714	
AUC	0.90		0.91		0.95		0.98		0.97		0.96		0.97	

Acknowledgements :

1. https://www.kaggle.com › mlg-ulb › creditcardfraud
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