

idea@IDEAde-MBP 04 Model training % python3 model\_train\_test.py

\*\* Setting up Data...

\*\* Building the Model...

** Model	Accuracy	Precision	Recall	F1	micro_precision	micro_recall	micro_F1	macro_precision	macro_recall	macro_F1
LogisticReg	0.7948	0.8236	0.6469	0.7246	0.7948	0.7948	0.7948	0.8022	0.7738	0.7805
RF	0.9578	0.9602	0.9378	0.9488	0.9578	0.9578	0.9578	0.9582	0.9549	0.9564
libc not found. The ctypes module in Python 3.8 is maybe too old for this OS.										
KNN	0.9087	0.9156	0.8608	0.8873	0.9087	0.9087	0.9087	0.9100	0.9019	0.9052
XGBoost	0.9691	0.9687	0.9568	0.9627	0.9691	0.9691	0.9691	0.9691	0.9673	0.9682
LightGBM	0.9696	0.9645	0.9626	0.9635	0.9696	0.9696	0.9696	0.9689	0.9686	0.9687
SVM	0.9106	0.9257	0.8547	0.8887	0.9106	0.9106	0.9106	0.9135	0.9027	0.9070

```
normal acc: (4776,)
illicit acc: (5237,)

** Building the Model...

** Model      Accuracy Precision Recall F1 micro_precision micro_recall micro_F1 macro_precision macro_recall macro_F1

LogisticReg   0.8392  0.8912  0.7890  0.8369  0.8392  0.8392  0.8392  0.8429  0.8416  0.8392

      RF      0.9848  0.9857  0.9853  0.9855  0.9848  0.9848  0.9848  0.9848  0.9848  0.9848

      KNN      0.9719  0.9946  0.9515  0.9726  0.9719  0.9719  0.9719  0.9720  0.9729  0.9719

XGBoost       0.9881  0.9914  0.9859  0.9886  0.9881  0.9881  0.9881  0.9880  0.9882  0.9881

LightGBM      0.9893  0.9923  0.9872  0.9898  0.9893  0.9893  0.9893  0.9892  0.9894  0.9893

      SVM      0.9625  0.9658  0.9626  0.9641  0.9625  0.9625  0.9625  0.9625  0.9625  0.9625

** Results of Best Model (LightGBM) **
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** lightGBM sklearn API ***				
	precision	recall	f1-score	support
normal class	0.9828	0.9840	0.9834	813
illicit class	0.9776	0.9759	0.9768	582
accuracy			0.9806	1395
macro avg	0.9802	0.9800	0.9801	1395
weighted avg	0.9806	0.9806	0.9806	1395
** Results of Best Model (XGBoost) **				
	precision	recall	f1-score	support
normal class	0.9817	0.9877	0.9847	813
illicit class	0.9827	0.9742	0.9784	582
accuracy			0.9821	1395
macro avg	0.9822	0.9810	0.9816	1395
weighted avg	0.9821	0.9821	0.9821	1395

** lightGBM sklearn API **				
	precision	recall	f1-score	support
normal class	0.5697	0.7638	0.6527	813
illicit class	0.3705	0.1942	0.2548	582
accuracy			0.5262	1395
macro avg	0.4701	0.4790	0.4537	1395
weighted avg	0.4866	0.5262	0.4867	1395
** Results of Best Model (XGBoost) **				
	precision	recall	f1-score	support
normal class	0.5996	0.7884	0.6812	813
illicit class	0.4724	0.2646	0.3392	582
accuracy			0.5699	1395
macro avg	0.5360	0.5265	0.5102	1395
weighted avg	0.5465	0.5699	0.5385	1395