**Credit Card.csv - Classification - ML Project**

**Bouba Ahmed [MSIE]**

**Sans Equilibrage :**

| **Algo /**  **metrics** | **F1-S** | **Recall** | **Prec** | **Accu** | **AUC** | **MCC** | **Kappa** | **Processing time** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Logistic Reg** | **0.6849315** | **0.55555** | **0.89285** | **0.99918** | **0.966223** | **0.703949** | **0.6845477** | **Very fast** |
| **SVM** | **0.7785234** | **0.64444** | **0.983050** | **0.999418** | **0.917594** | **0.795701** | **0.778244** | **Ta9riban sa3a 60** |
| **Random F** | **0.835443** | **0.73333** | **0.97058** | **0.99954** | **0.931161** | **0.843457** | **0.8352180** | **Ta9riban 15 min** |
| **Decision Tree** | **0.6881720** | **0.711111** | **0.666666** | **0.998977** | **0.855273** | **0.688019** | **0.687660** | **dghyaaa** |
| **XGBoost** | **0.8227848** | **0.722222** | **0.955882** | **0.999506** | **0.964763** | **0.830656** | **0.8225425** | **Chi 12 min** |
| **Gaussien NB** | **0.1025270** | **0.788888** | **0.054826** | **0.978095** | **0.955272** | **0.204461** | **0.0998573** | **dghya** |
| **Gradient Boos** | **0.7402597** | **0.633333** | **0.890625** | **0.999295** | **0.766499** | **0.750722** | **0.739916** | **dghya** |

**Oversampling :**

* **SMOTE**

| **Algo /**  **metrics** | **F1-S** | **Recall** | **Prec** | **Accu** | **AUC** | **MCC** | **Kappa** | **Processing time** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Logistic Reg** |  |  |  |  |  |  |  |  |
| **SVM** |  |  |  |  |  |  |  |  |
| **Random F** |  |  |  |  |  |  |  |  |
| **Decision Tree** |  |  |  |  |  |  |  |  |
| **XGBoost** |  |  |  |  |  |  |  |  |
| **Gaussien NB** |  |  |  |  |  |  |  |  |
| **Gradient Boos** |  |  |  |  |  |  |  |  |

* **ADASYN**

| **Algo /**  **metrics** | **F1-S** | **Recall** | **Prec** | **Accu** | **AUC** | **MCC** | **Kappa** | **Processing time** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Logistic Reg** |  |  |  |  |  |  |  |  |
| **SVM** |  |  |  |  |  |  |  |  |
| **Random F** |  |  |  |  |  |  |  |  |
| **Decision Tree** |  |  |  |  |  |  |  |  |
| **XGBoost** |  |  |  |  |  |  |  |  |
| **Gaussien NB** |  |  |  |  |  |  |  |  |
| **Gradient Boos** |  |  |  |  |  |  |  |  |

* **SVM SMOTE**

| **Algo /**  **metrics** | **F1-S** | **Recall** | **Prec** | **Accu** | **AUC** | **MCC** | **Kappa** | **Processing time** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Logistic Reg** |  |  |  |  |  |  |  |  |
| **SVM** |  |  |  |  |  |  |  |  |
| **Random F** |  |  |  |  |  |  |  |  |
| **Decision Tree** |  |  |  |  |  |  |  |  |
| **XGBoost** |  |  |  |  |  |  |  |  |
| **Gaussien NB** |  |  |  |  |  |  |  |  |
| **Gradient Boos** |  |  |  |  |  |  |  |  |