Prêt à dépenser

« Modèle de scoring »

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Contexte

CRÉDIT À LA CONSOMMATION

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Analyse de la forme

307.511 Lignes et 122 colonnes

Répartition « Target » désequilibrée

	Nombre de valeur	Pourcentage
0	282686.0	91.93
1	24825.0	8.07

Analyse de la forme

307.511 Lignes et 122 colonnes

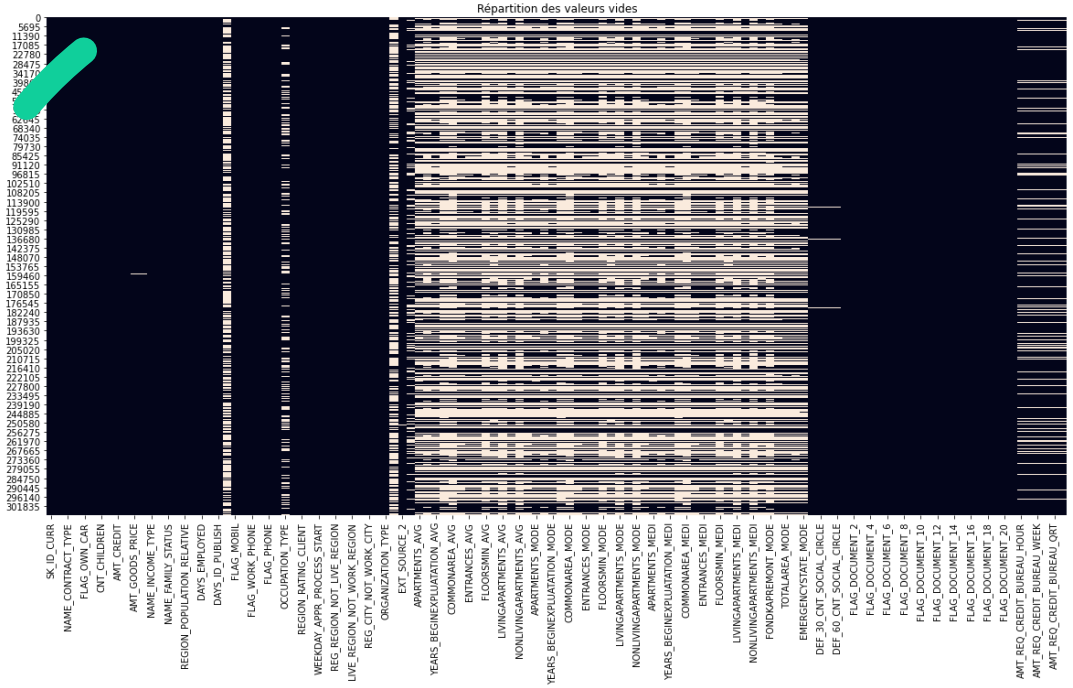
Répartition « Target » désequilibrée

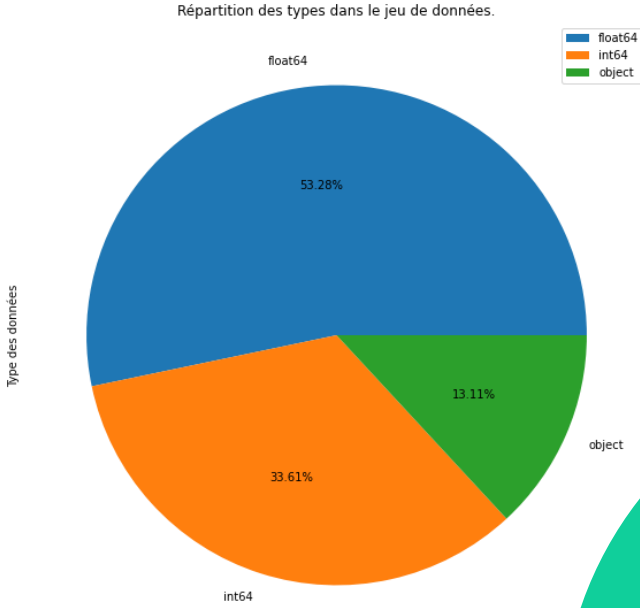
	Nombre de valeur	Pourcentage
remboursé	282686.0	91.93
non-remboursé	24825.0	8.07

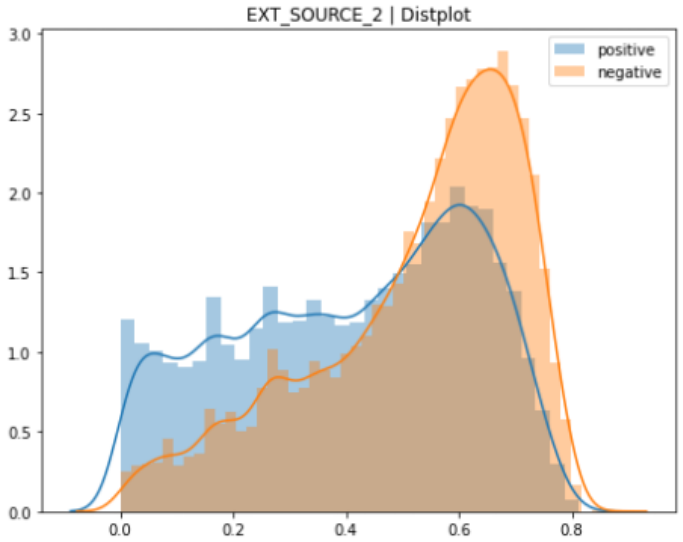
Analyse de la forme (suite)

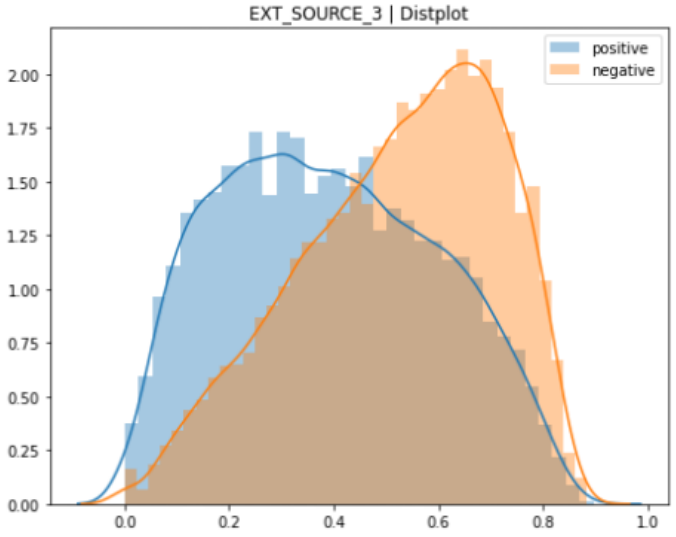
Répartitions des valeurs vides

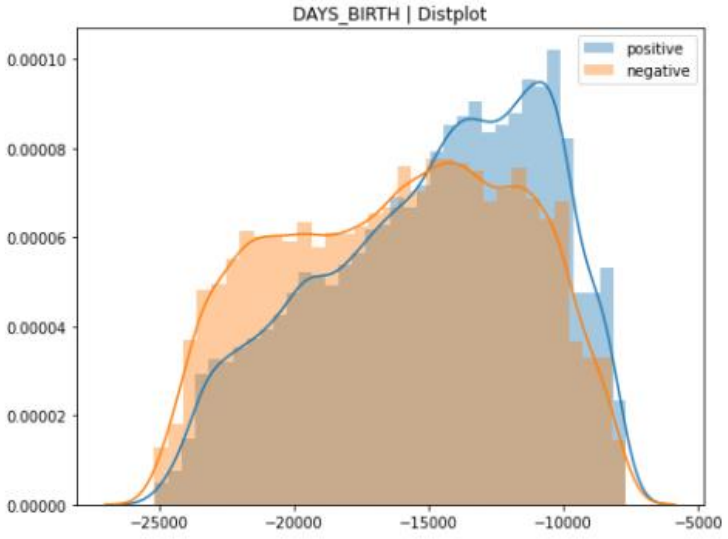
Répartition des types de données

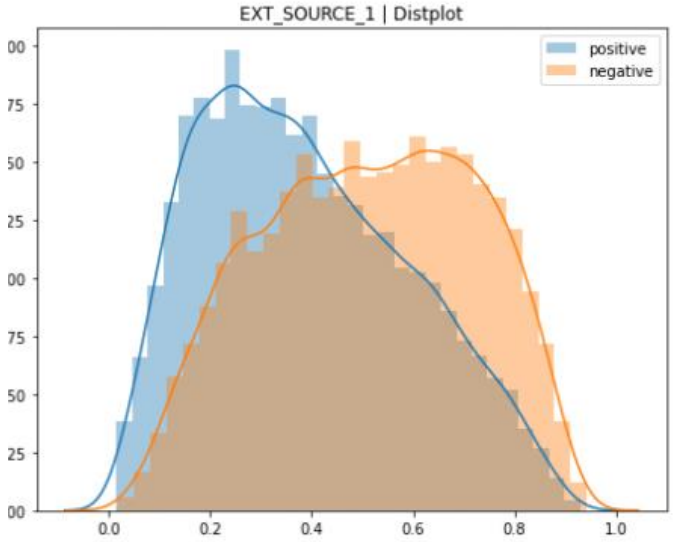








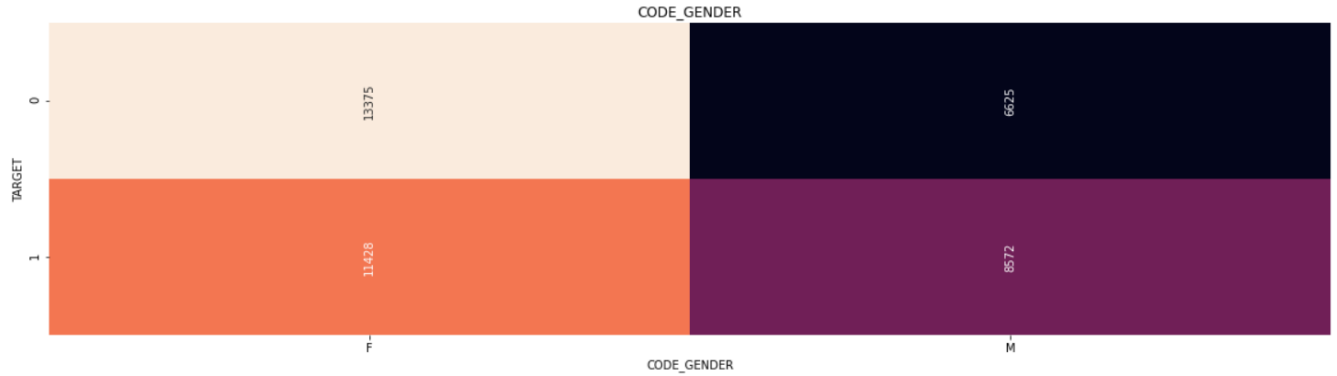


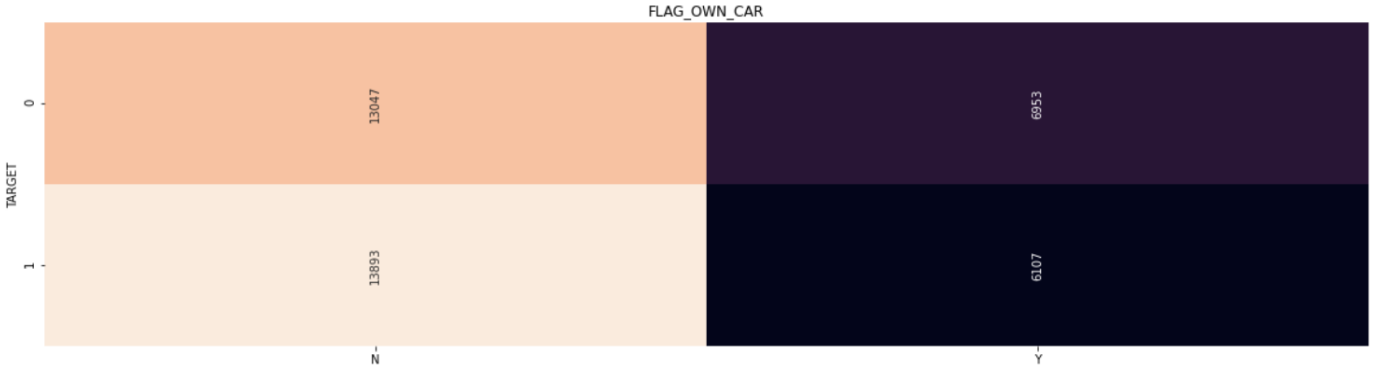


Analyse de fond

Valeurs numériques

Analyse de fond

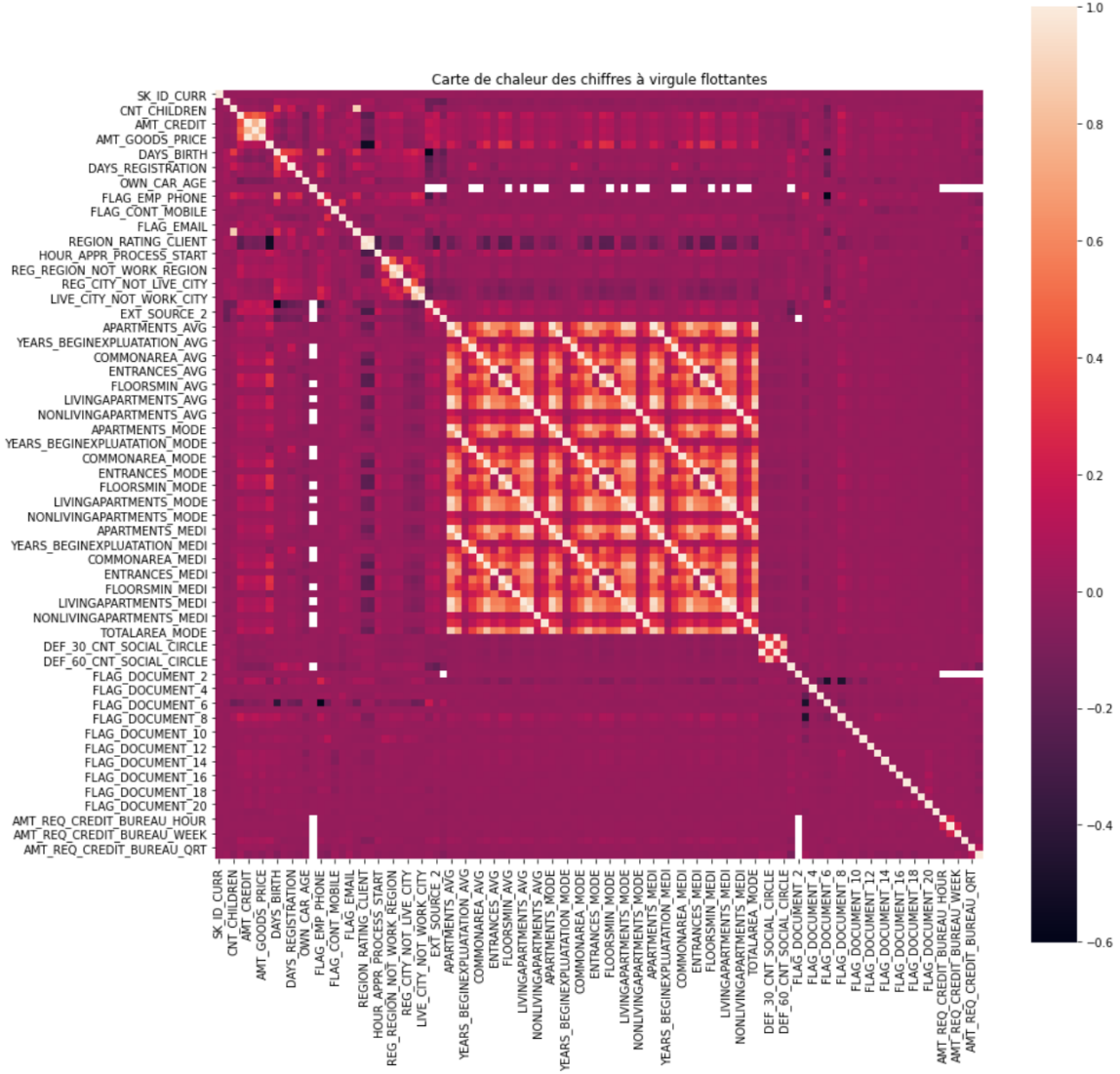




Valeurs numériques

Valeurs catégorielles

Analyse de fond



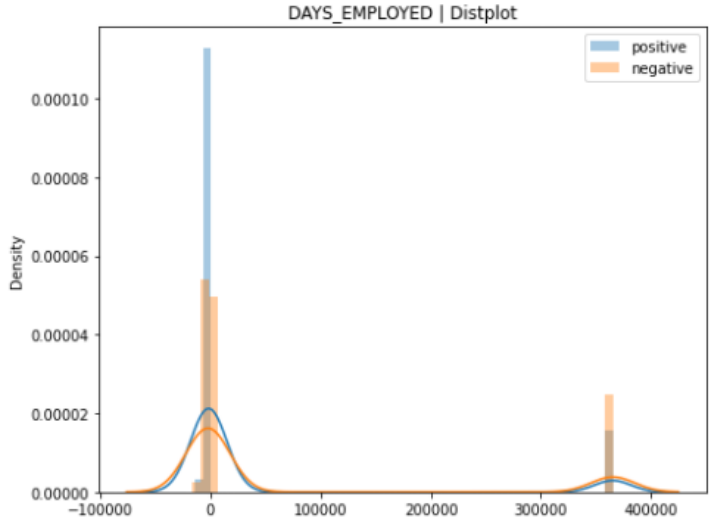
Valeurs numériques

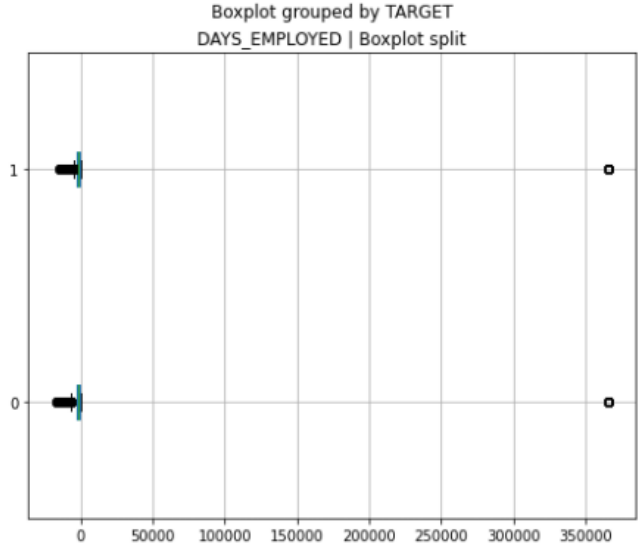
Valeurs catégorielles

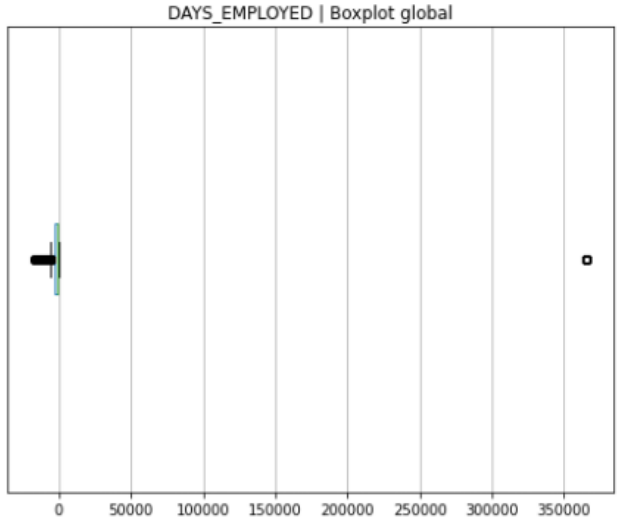
Corrélation valeurs numériques

Traitement du jeu de données

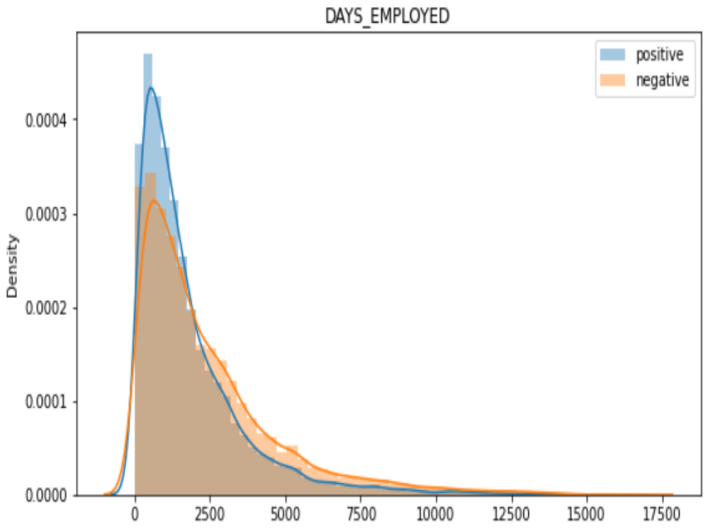
Valeurs aberrantes

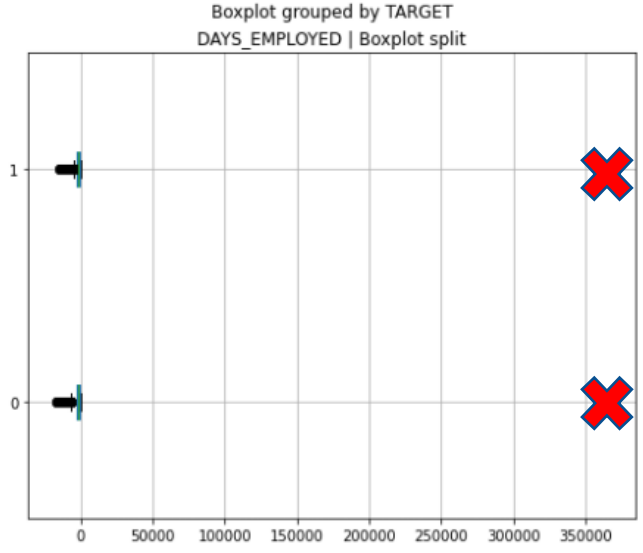


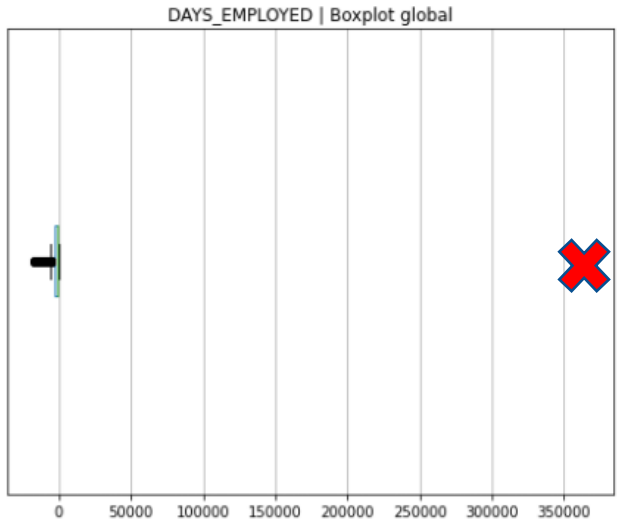




Valeurs aberrantes







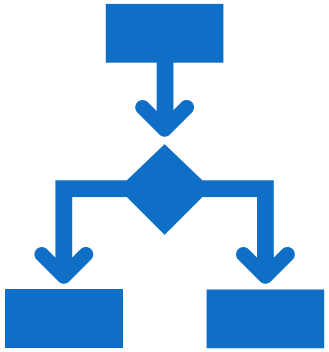
Imputation

Imputation Médiane

+

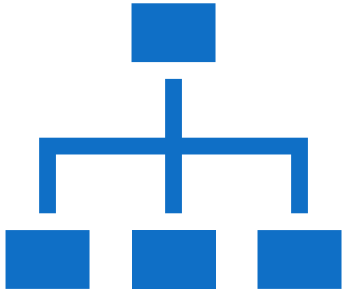
Reste à 0

Données catégorielles



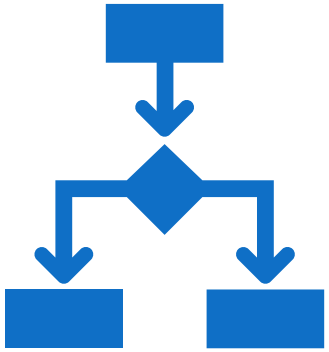
LabelEncoder (unique valeurs <= 2)

/	ANIMAL
1	CHIEN
2	CHAT



OneHotEncoder

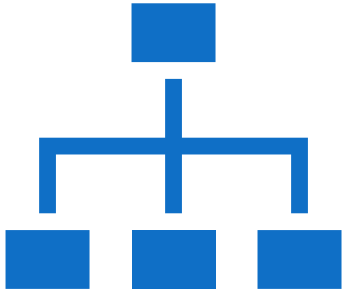
Données catégorielles



LabelEncoder (unique valeurs <= 2)

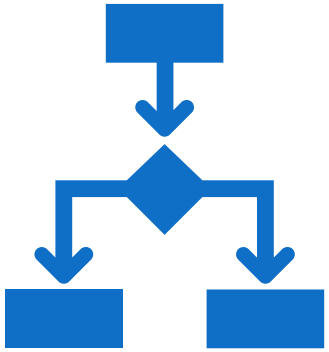
/	ANIMAL
1	0
2	1

- CHIEN = 0
- CHAT = 1



OneHotEncoder

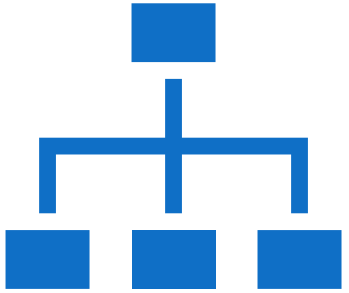
Données catégorielles



LabelEncoder (unique valeurs <= 2)

/	ANIMAL
1	0
2	1

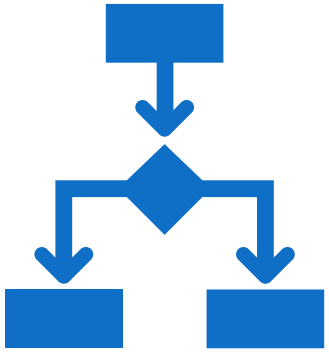
- CHIEN = 0
- CHAT = 1



OneHotEncoder

	ANIMAL_
1	CHIEN
2	CHAT

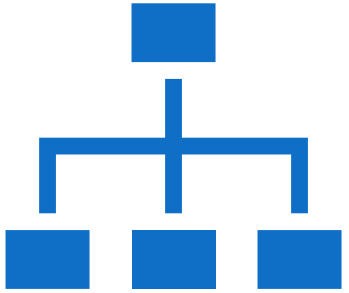
Données catégorielles



LabelEncoder (unique valeurs <= 2)

/	ANIMAL
1	0
2	1

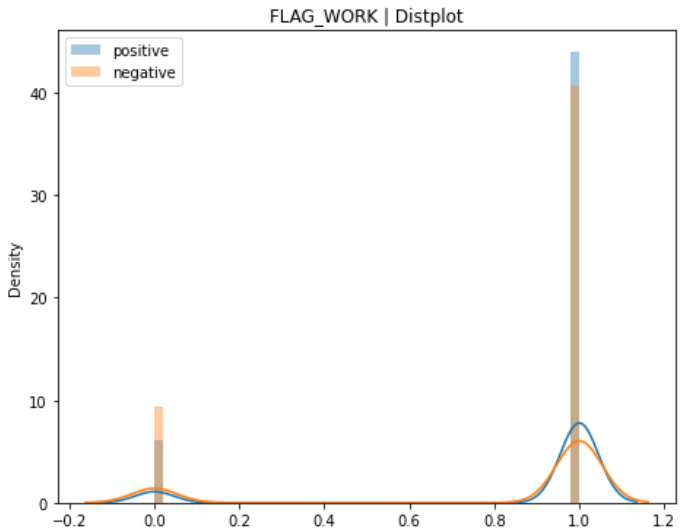
- CHIEN = 0
- CHAT = 1

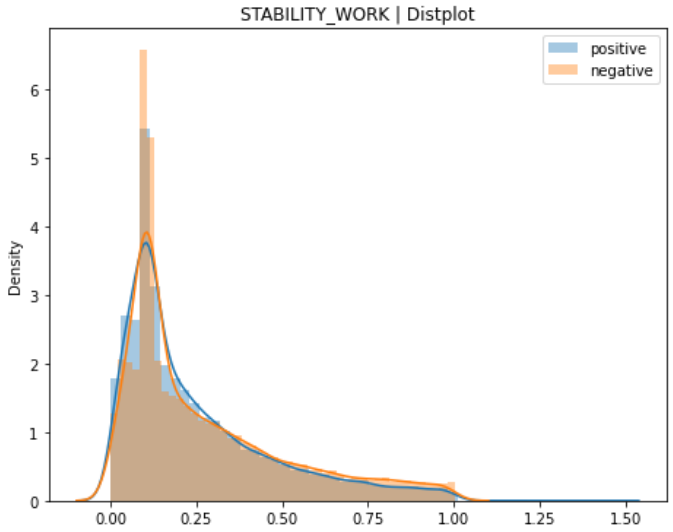


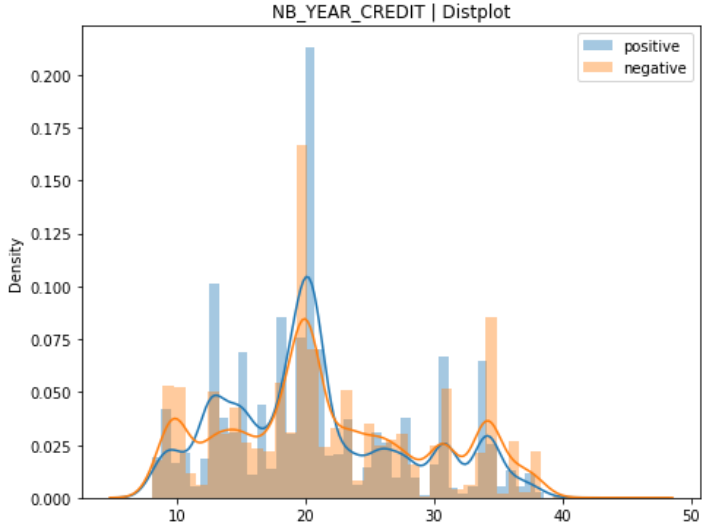
OneHotEncoder

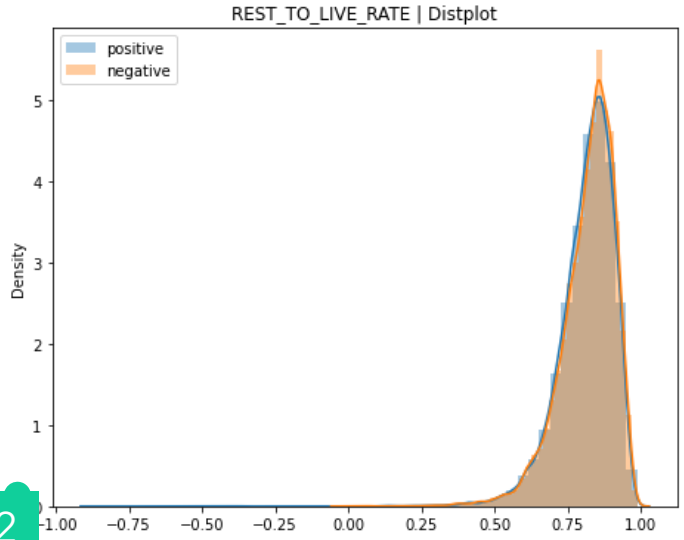
	ANIMAL_CHIEN	ANIMAL_CHAT
1	1	0
2	0	1

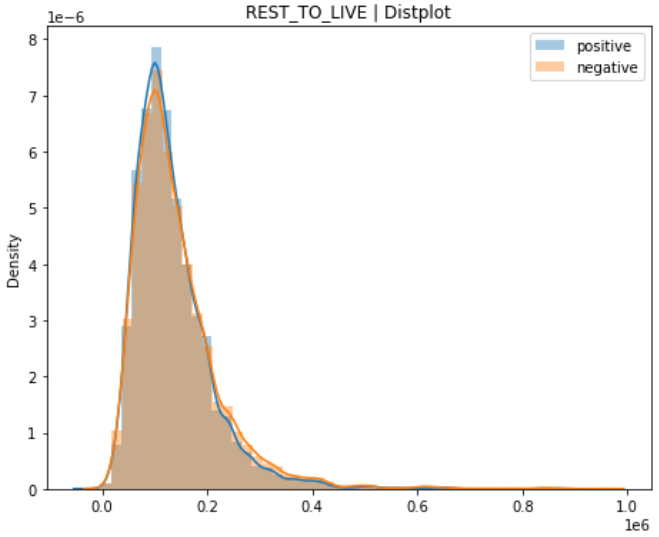
Création de nouvelles colonnes

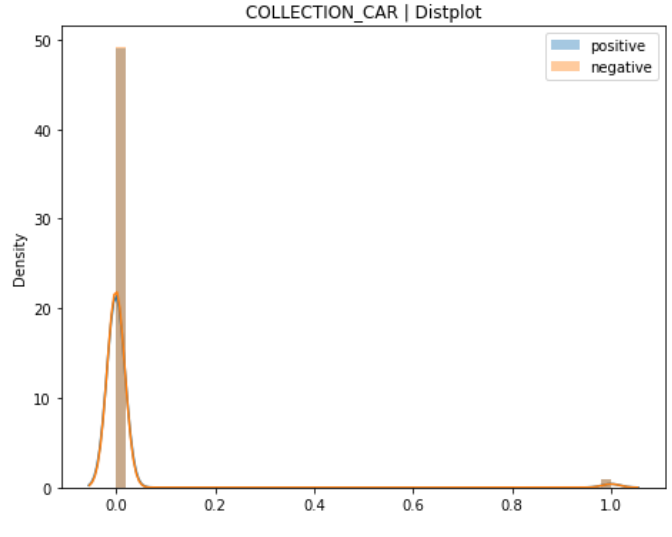












Sélections des données

MÉTIER

BORUTA

STATISTIQUE

Modélisation

Métrique

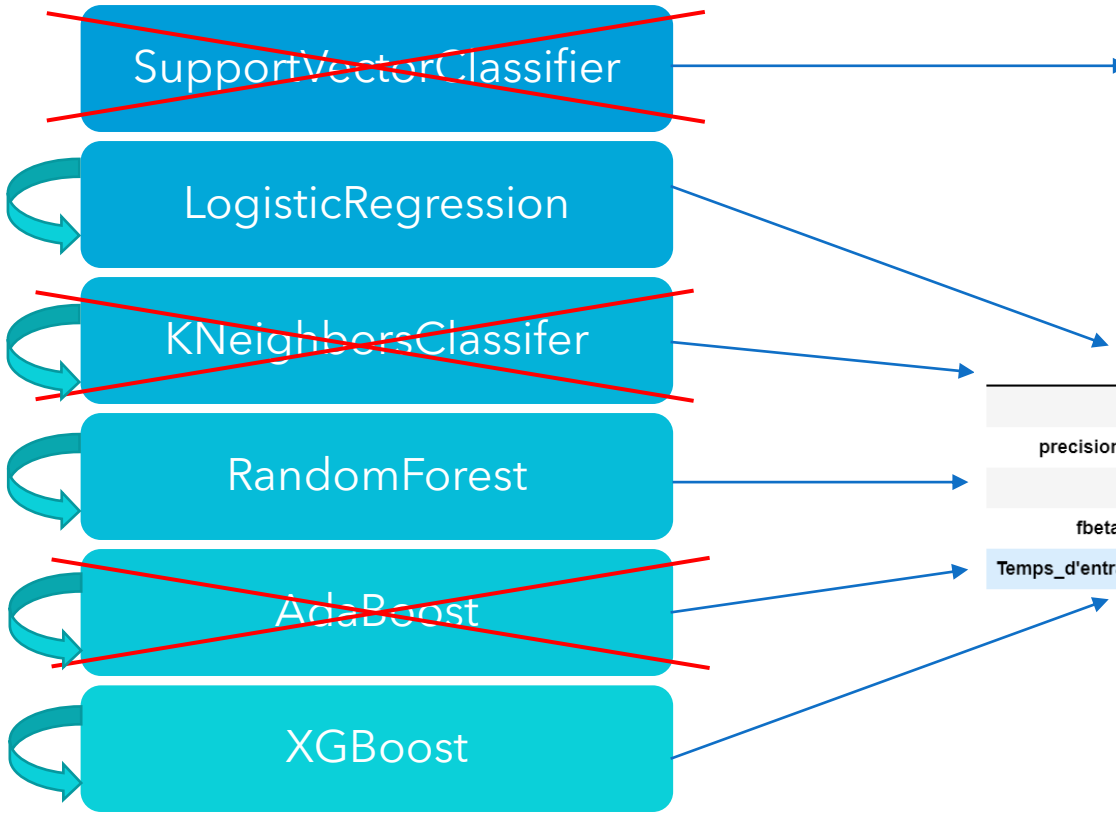
- Fβ-score (β à 2)
- Recall
- Precision

Choix des modèles

- SupportVectorClassifier
- LogisticRegression
- KNeighborsClassifer
- RandomForest
- AdaBoost
- XGBoost

Tests itératifs

GridSearchCV



Dataset 350.000 lignes et 67 colonnes…

	RandomForest_no_prep	AdaBoost_no_prep	LogisticRegression_no_prep	KNN_no_prep	Xgboost_without_prep	Naive
recall	0.627	0.0	0.666	0.049	0.636	0.498
precision (label 1)	0.171	0.0	0.157	0.169	0.181	0.081
accuracy	0.724	0.919	0.685	0.904	0.738	0.5
fbeta_2-score	0.409	0.0	0.404	0.057	0.423	0.245
Temps_d'entrainement	6.607m	5.827m	0.403m	15.561m	11.998m	None

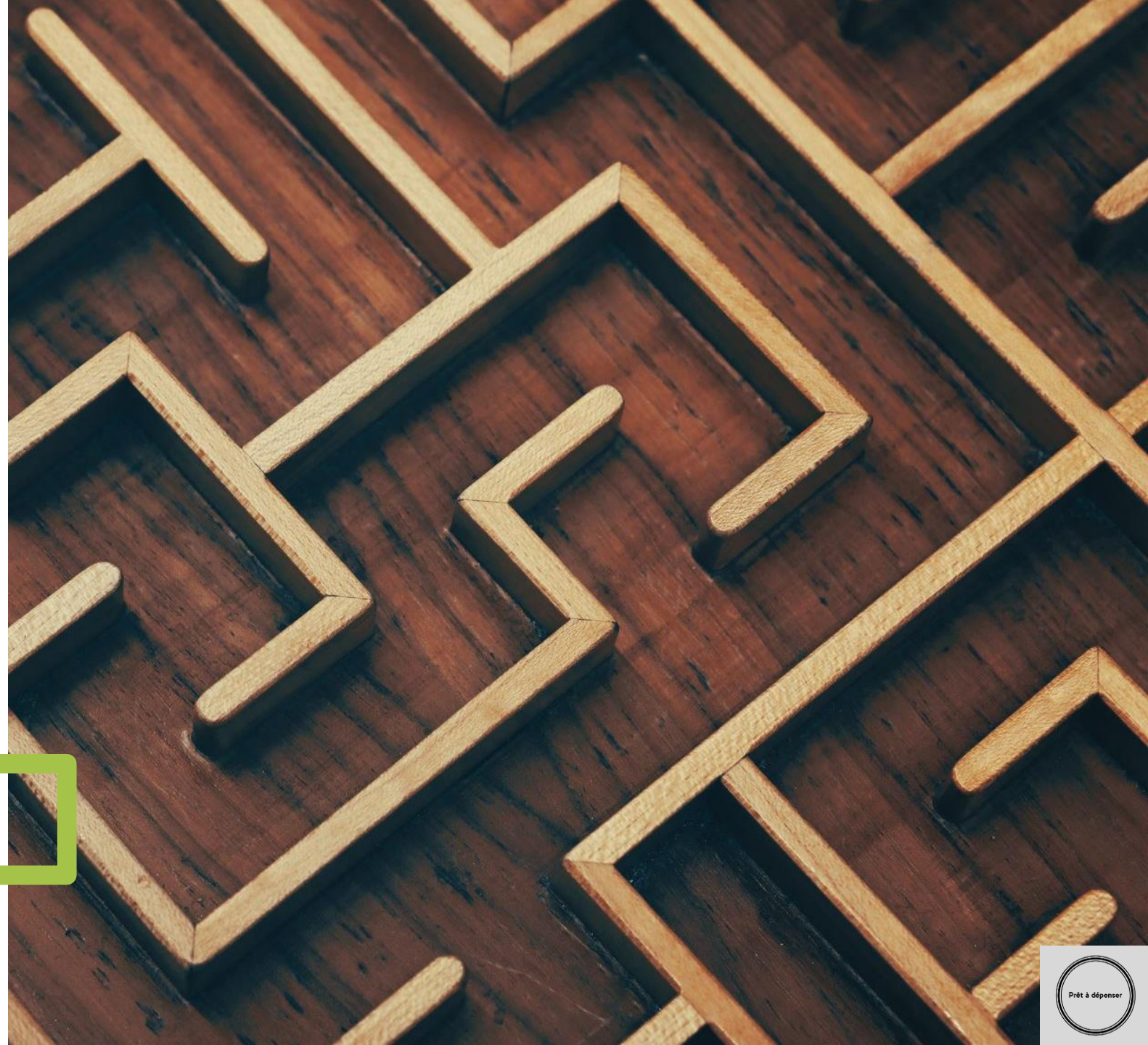
Optimisation du modèle

RandomForest

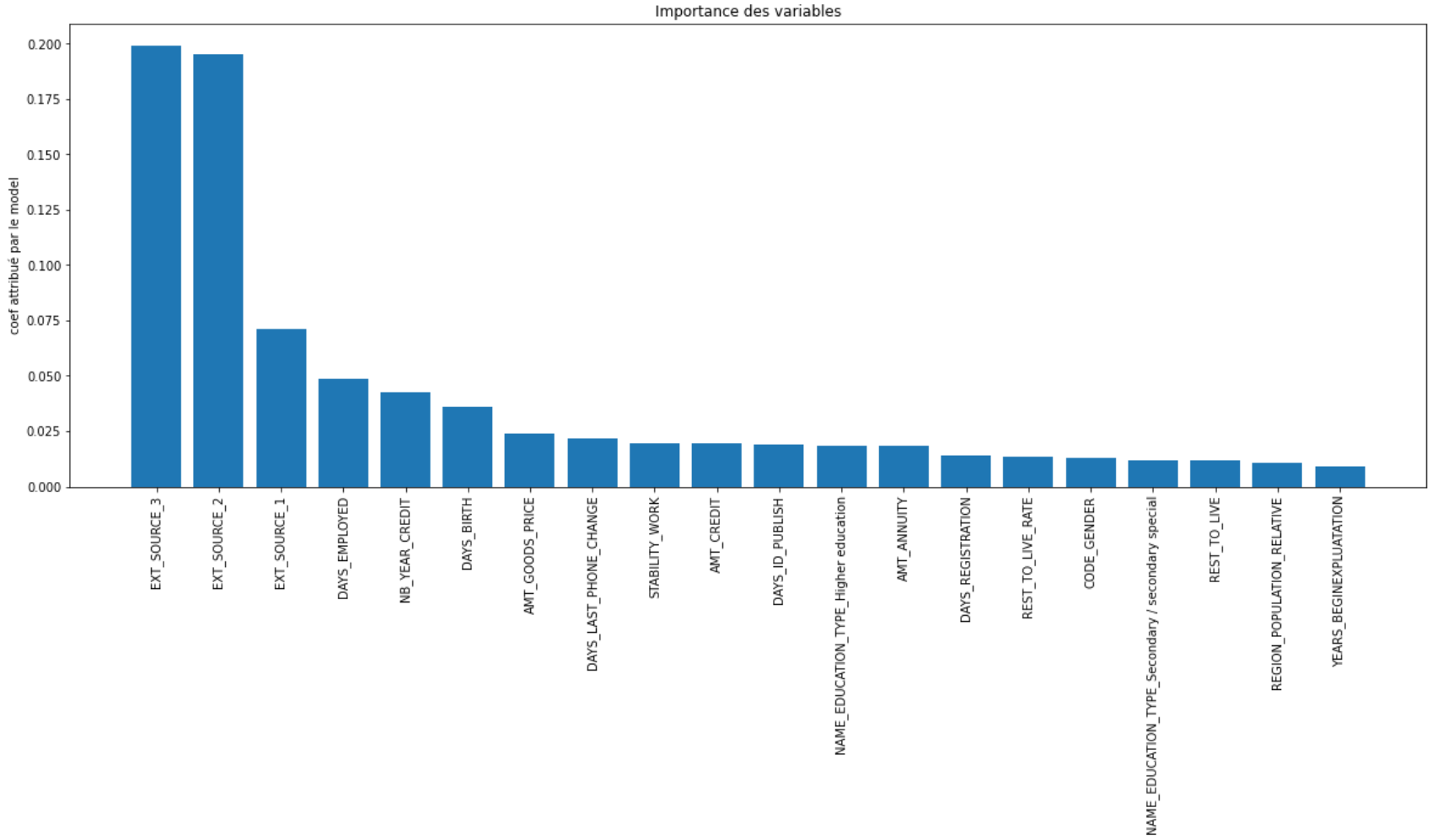
- Hyperparamètres finaux :

  - N_estimators : 250
  - Criterion : « entropy »
  - Max_depth : 10
  - Class_weight : balanced

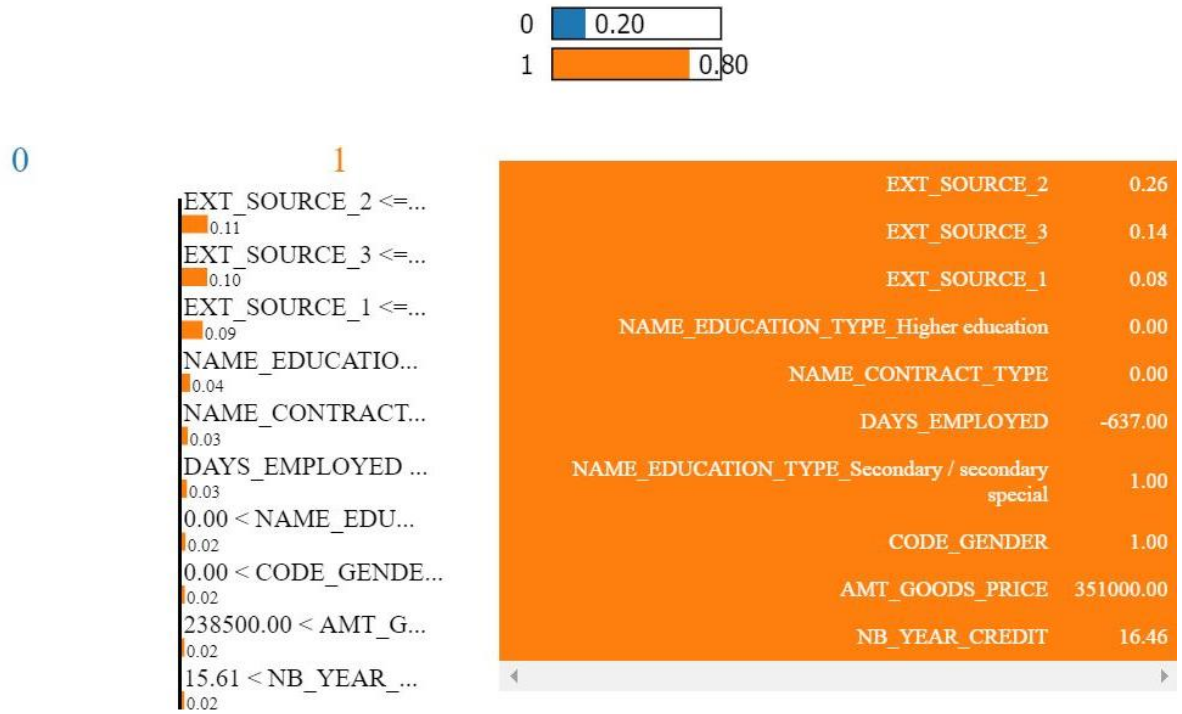
Explication du modèle

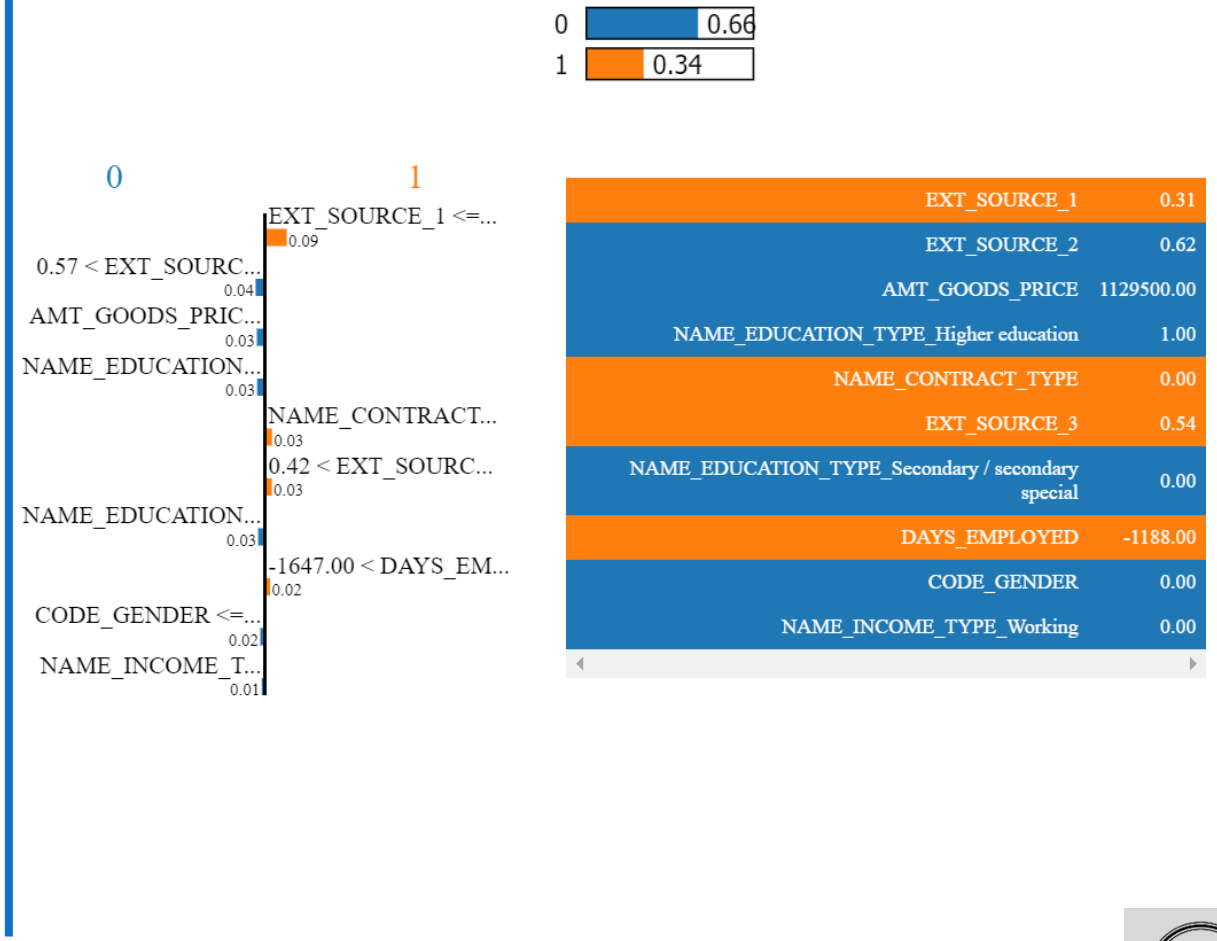


Explication simple

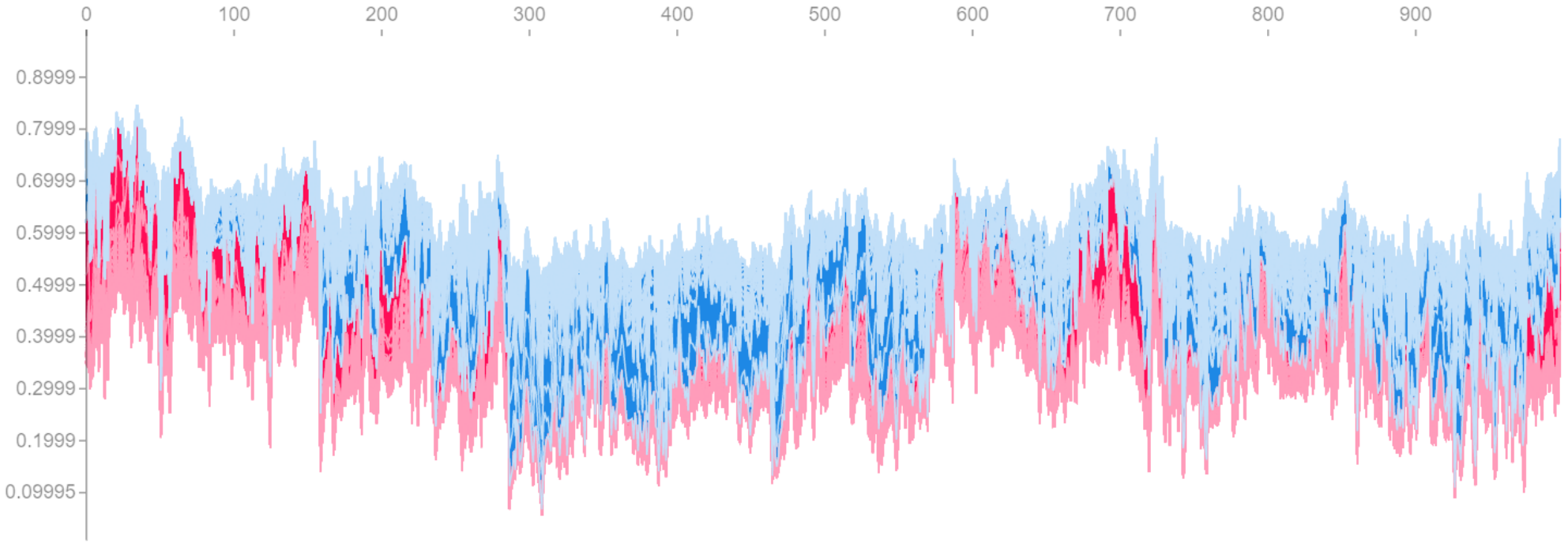


Explication par LIME

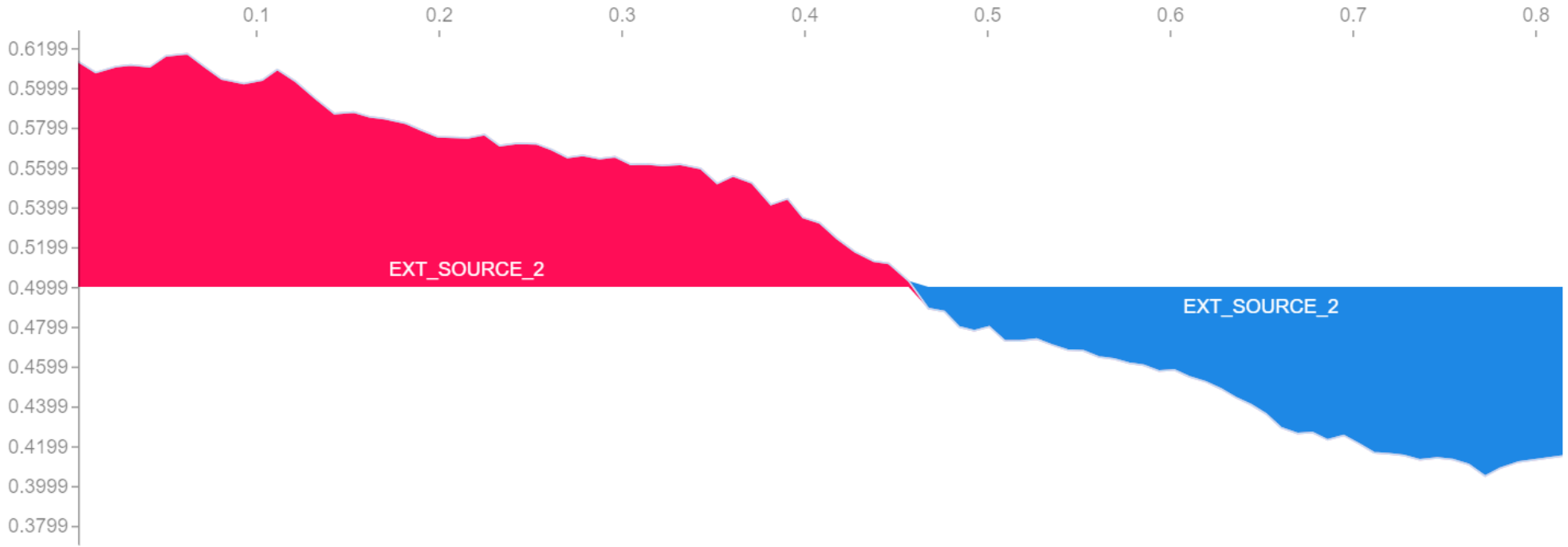




Explication par SHAP



Explication par SHAP



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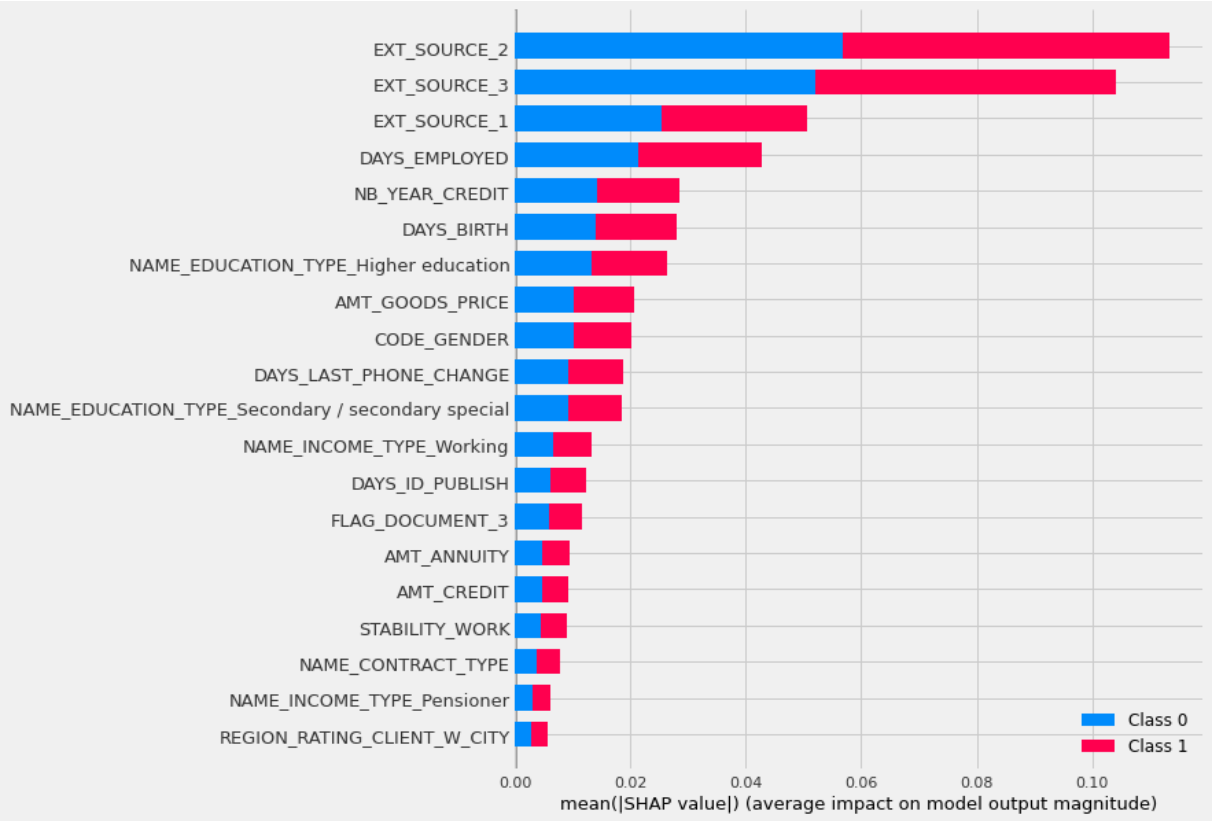
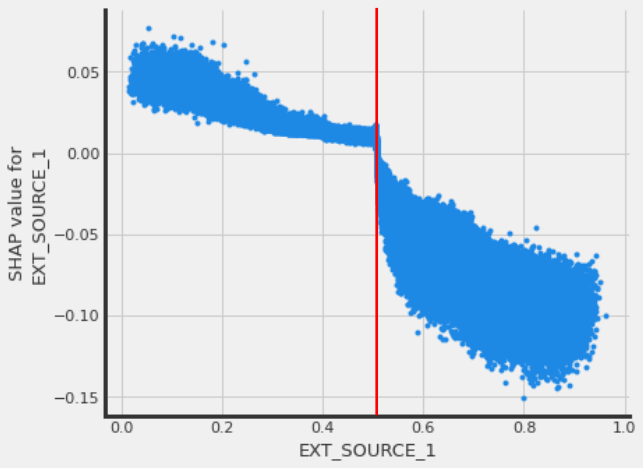
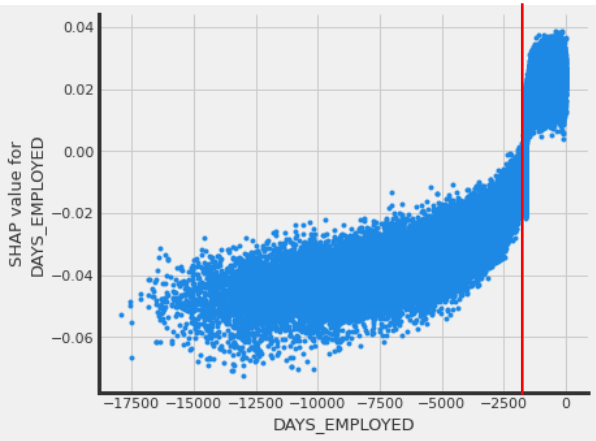
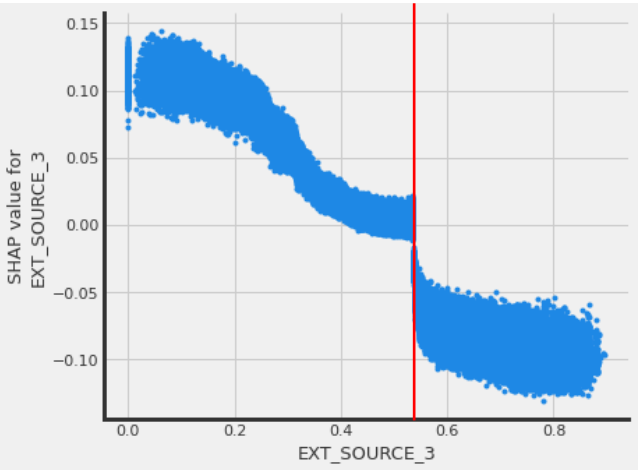
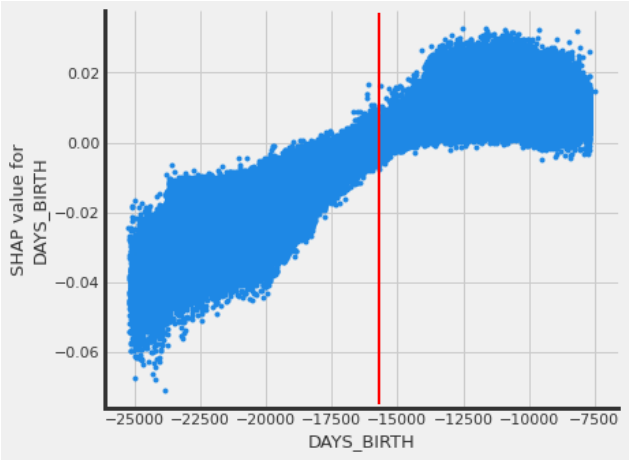


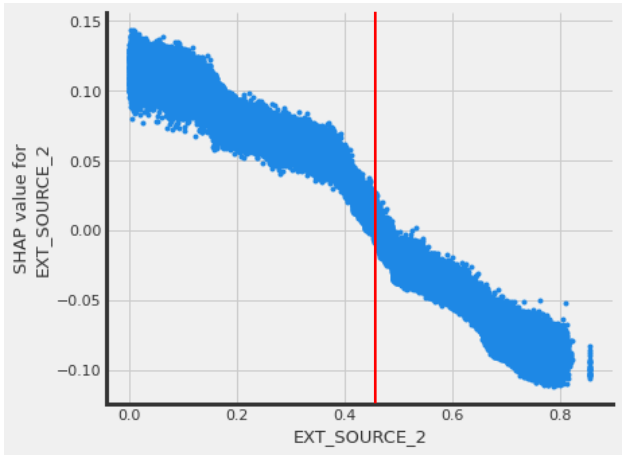
Explication par SHAP





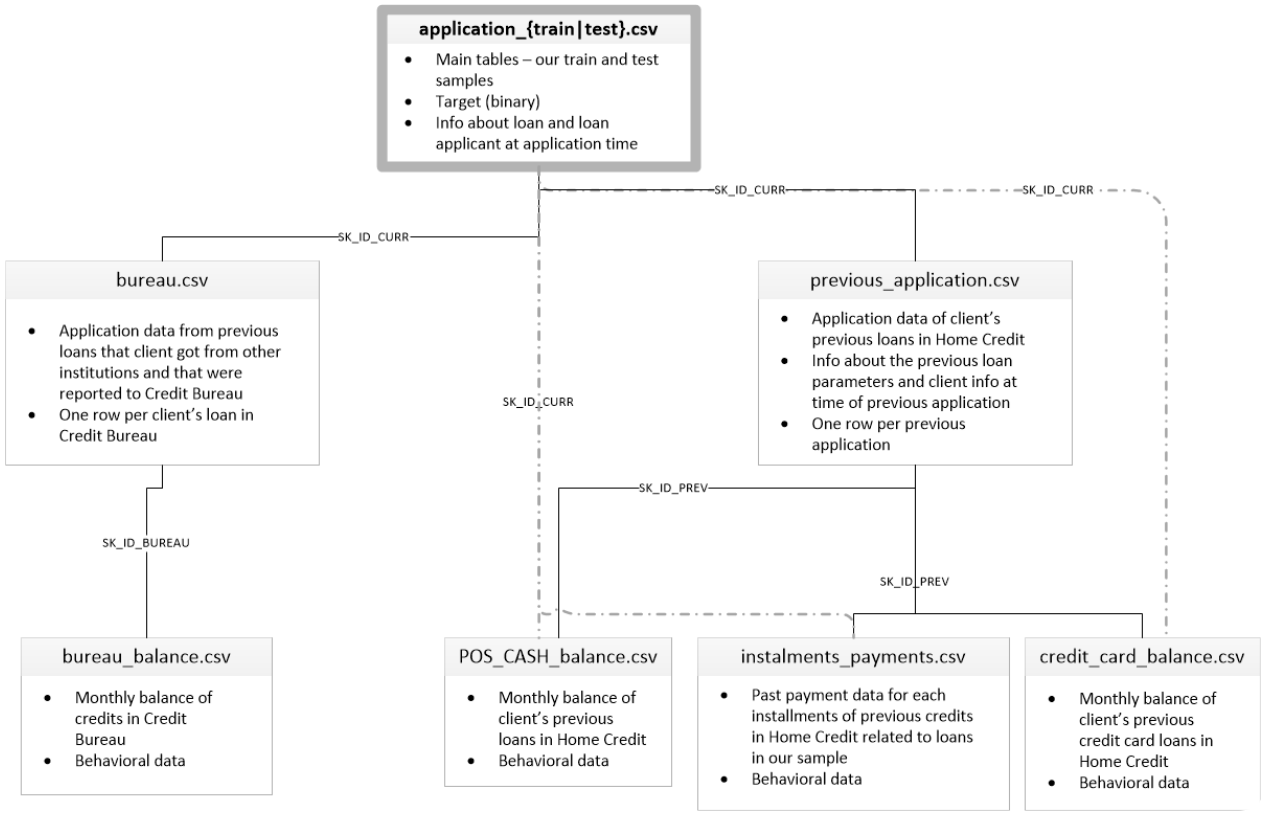






Conclusion

Conclusion



Score 0,408

Prendre tous les fichiers

Premier projet ML

Merci de votre attention, avez-vous des questions ?