**BV0**

We designed a baseline with manual exploration

* Cross-Validation

Parameters Otimization

* Gridsearch

Pre-Processing

* Drop missing values (training, validation)
* Manual Outlier Removal (training)
* Generate Dummies (training join with validation)
* Normalize (Min-max Scaler)

Feature Engineering

* Extract Business features

**BV1**

* Cross-Validation (Stratify k-folds)

We choose stratified because it splits the dataset in a way that is well distributed, and consistent with the original distribution.

Parameters Otimization

* Gridsearch

Pre-Processing

* Balancing do dataset (weights)

Undersampling vs Oversampling vs Smot vs Weight balancing vs Adesine

We decided to select between SMOT and ADESINE because our data was too small for undersampling. Oversampling is a simpler version of SMOT

[https://machinelearningmastery.com/tactics-to-combat-imbalanced-classes-in-your-machine-learning-dataset/](https://machinelearningmastery.com/tactics-to-combat-imbalanced-classes-in-your-machine-learning-dataset/?fbclid=IwAR3rieIqzjnvo-J3LFH0eTGdb6JTUb9X8K3SbR7gMkkECTk-O3ApRgtpqhQ)

* Impute missing values
* Box-Plot outlier removal
* Generate Dummies
* Normalize (Min-max Scaler)

Feature Engineering

* Extract Business features

Feature Selection

* Correlation based feature selection (Feature importance based on correlation to Response)

**BV2**

Parameters Otimization

* Gridsearch

Pre-Processing

* Balancing do dataset (weights)
* Impute missing values
* Outlier Smoothing
* Generate Dummies
* Normalize (Min-Max Scaler)

Feature Engineering

* Extract Business Features
* Pca vs Lda vs Ica vs Factor Analysis (Look for comparisons on the internet)

Feature Selection

* Ranking feature selection

Missing:

* Bayesian Optimization

To-Do:

Correlations