Prediction of Marketing Campaign

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Objective

To predict the success or failure of the recent campaign based on customer's responses for a company.

Plans

Feature Engineering

- Birth year can be replaced to the age of the customer.
- Total number of children can be created by taking the sum of number of kids and teens.
- Date of enrollment can be replaced to total days of enrollment of customer.
- Total amount spent can be engineered from the sum of features containing amount spent on various products.
- Total purchases can be engineered from the sum of features indicating number of purchases through different channels.
- Total number of successful campaigns can be engineered from the sum of features indicating response of previous campaigns.

For feature selection, the correlation of target variable with other features will be calculated and the features with high correlation will be considered for the modelling.

Modelling

With stratified labels, data will be split into training and cross validation sets. This data will be trained using five classification models: Decision Tree Classifier, Random Forest Classifier, Support Vector Machine Classifier, Logistic Regression, and Naïve Bayes Classifier.
The performance measures like accuracy, precision, recall, f-measure of algorithms mentioned will be calculated on cross validation sets when default values of parameters are used and then calculated again after applying three parameter tuning strategies: Grid Search, Random Search and Bayesian Optimization. On the specified algorithms, a comprehensive comparison analysis of the mentioned parameter tuning methods will be employed, and a high-performing algorithm with a high-performing tuning strategy will be selected for predicting the response in the test set.