Credit-Card Customer Churn Prediction
A Mphasis machine learning solution

Why Credit-Card Customer Churn Prediction?

• Customer churn can create uncertainty in future revenues. Mphasis addresses this by predicting churn and allows for corrective action.
• Obtaining new customers is frequently more difficult than retaining customers. Mphasis helps identify customers likely to churn thereby powering firms' retention efforts.
• This solution can be used by credit card companies with varied data sets since the trainable algorithm allows for changes in input data features.

Product overview
Customer churn refers to the loss of existing clients or customers. Mphasis identifies credit card customers who are more likely to close their account and stop using their credit card. During the training stage, the solution automatically conducts feature interaction on the training data and selects a subset of features based on feature importance. It then trains multiple models and identifies the best performing model. This model is then selected for prediction on new data.

Product features
Customer church prediction
This solution can be utilized to identify customers who are more likely to discontinue using their credit card in the future. The credit card provider can then take appropriate steps to retain the customers. Mphasis can also help in identifying if a certain customer segment is more likely to leave the credit card provider in the future. This solution can then be used to explore probable causes of customer churn.

Predictive modeling
The solution automatically conducts feature interaction on the training data and selects a subset of features based on feature importance. It then trains multiple models and identifies the best performing model. This model is then selected for prediction on new data.

Business intelligence and analytics
Mphasis HyperGraf is an omni-channel customer 360 analytics solution. It employs customized deep learning and machine learning solutions to generate actionable insights across millions of data points spread over multiple customer engagement channels.

Additional Resources
• Mphasis HyperGraf
• Sample Jupyter Notebook
• Sample Input File

18 Algorithms for comparison
**How it works**

During the training phase, customer data tagged as churn or not churn is provided as input through an Amazon Simple Storage Service (S3) bucket. This data then undergoes validation and preprocessing. The solution automatically conducts attribute interaction on the training data and selects a subset of features based on feature importance. It then identifies the patterns and trains multiple models. The best performing model is saved for future inferencing on untagged data.

During the inference phase, an untagged dataset similar to the training dataset is provided as input. This dataset then undergoes validation, preprocessing, and is utilized by the trained algorithm to make prediction of customers leaving their credit card provider.

**Input** – Data in comma-separated values (CSV) format conforming with the usage instructions should be provided as training input to the solution. Once a model is trained a similar file can be provided for testing the model.

**Output** – Solution provides output as ‘0’ or ‘1’ for each input record. ‘0’ means not likely to leave the credit card provider while ‘1’ means likely to leave the credit card provider.

**Differentiators**

- Conducts feature interactions automatically from the input data and selects important features.
- Trains multiple models and selects the best performing model to give better performance.
- Employs trainable algorithms on user data which allows flexibility in features for input data.

Solution available in [AWS Marketplace](https://aws.amazon.com/marketplace)