Offline to Online (O2O) Prediction of Coupon Redemption

#### Background

As smart phone penetration reaches the hundreds of millions mark, O2O (Online to Offline) requires businesses to have a strong presence both offline and online. APPs with O2O capabilities accumulate daily consumer behavior and location data that require big data and commercial operations management. The competition at hand focuses on coupon redemption rates. Sending coupons is a general O2O marketing method used to activate existing customers and attract new ones.

Customers are delight to receive coupons that they needed while they will feel disturbed when receiving coupons that they do not need. For merchants, sending unwanted coupons may erode brand equity and hinder marketing expense forecasting. Targeted marketing is an important technology to increase the coupon redemption rate, providing relevant discounts to customers and effective marketing tools to businesses.

The project provides participants with abundant O2O data in this field and expects students to use analytical modelling to predict whether the customer will use the coupon within a specified time frame.

#### Data

This project provides a real online and offline user consumption dataset from January 1, 2016 to June 30, 2016. The students are expected to predict the probability of customers redeeming a coupon within 15 days of receiving it.

**Note:** To protect the privacy of users and merchants, data is desensitized and under biased sampling.

**Download 4 files**

<https://paristech.oss-cn-shanghai.aliyuncs.com/data/ccf_offline_stage1_test_revised.csv>

https://paristech.oss-cn-shanghai.aliyuncs.com/data/ccf\_offline\_stage1\_train.zip

https://paristech.oss-cn-shanghai.aliyuncs.com/data/ccf\_online\_stage1\_train.zip

https://paristech.oss-cn-shanghai.aliyuncs.com/data/sample\_submission.csv

#### Evaluation

The results are evaluated based on the average AUC value. That is, the AUC value is calculated for every coupon\_id. The average of each AUC value is the evaluation score. More information on [AUC](https://en.wikipedia.org/wiki/Receiver_operating_characteristic#Area_under_the_curve) value calculation method on wikipedia.

#### Data Description

Table 1: Offline consumption & coupons



Table 2: Online click/consumption & coupons



Table 3：Offline coupon redemption prediction



Table 4：Submit file

