Machine Learning Hackathon

Problem Statement

You are hired as a data scientist at a leading shopping mall in the country. The shopping mall has tied up with different restaurants/bars to provide discount coupons to all its customers. The coupons increase the footfalls at these restaurants and helps the shopping mall to attract more customers. The organization have been relying simple guidelines to determine what coupons are to be provided to the customers, however the organization feels that they need a more robust model to determine whether a customer will accept the recommended coupon or not to improve the use rate. Organization plans to use a mix of client's details that they have captured to create this model.

You are provided with the historical data of the recommended coupons along with customer details in the previous years and your task is to come up with a model which would be able to predict whether a customer will accept the recommended coupon.

Data Description

train data - 10,147 records
test data - 2,537 recordss

- destination: No Urgent Place, Home, Work
- passanger: Alone, Friend(s), Kid(s), Partner (who are the passengers in the car)
- weather: Sunny, Rainy, Snowy
- temperature:55, 80, 30
- time: 2PM, 10AM, 6PM, 7AM, 10PM
- coupon: Restaurant (<$20), Coffee House, Carry out & Take away, Bar, Restaurant($20-$50)
- expiration: 1d, 2h (the coupon expires in 1 day or in 2 hours)
- gender: Female, Male
- age: 21, 46, 26, 31, 41, 50plus, 36, below21
- maritalStatus: Unmarried partner, Single, Married partner, Divorced, Widowed
- has_Children:1, 0
- education: Some college - no degree, Bachelors degree, Associates degree, High School Graduate, - Graduate degree (Masters or Doctorate), Some High School
- occupation: Unemployed, Architecture & Engineering, Student, Education&Training&Library, Healthcare Support, Healthcare Practitioners & Technical, Sales & Related, Management, Arts Design Entertainment Sports & Media, Computer & Mathematical, Life Physical Social Science, Personal Care & Service, Community & Social Services, Office & Administrative Support, Construction & Extraction, Legal, Retired, Installation Maintenance & Repair, Transportation & Material Moving,
- Business & Financial, Protective Service, Food Preparation & Serving Related, Production Occupations,
- Building & Grounds Cleaning & Maintenance, Farming Fishing & Forestry
- income: $37500 - $49999, $62500 - $74999, $12500 - $24999, $75000 - $87499,
- $50000 - $62499, $25000 - $37499, $100000 or More, $87500 - $99999, Less than $12500

- Bar: never, less1, 1-3, gt8, nan,4-8 (feature meaning: how many times do you go to a bar every month?)
- CoffeeHouse: never, less1, 4-8, 1-3, gt8, nan (feature meaning: how many times do you go to a coffeehouse every month?)
- CarryAway:n4-8, 1-3, gt8, less1, never (feature meaning: how many times do you get take-away food every month?)
- RestaurantLessThan20: 4-8, 1-3, less1, gt8, never (feature meaning: how many times do you go to a restaurant with an average expense per person of less than $20 every month?)
- Restaurant20To50: 1-3, less1, never, gt8, 4-8, nan (feature meaning: how many times do you go to a restaurant with average expense per person of $20 - $50 every month?)
- toCoupon_GEQ15min:0,1 (feature meaning: driving distance to the restaurant/bar for using the coupon is greater than 15 minutes)
- toCoupon_GEQ25min:0, 1 (feature meaning: driving distance to the restaurant/bar for using the coupon is greater than 25 minutes)
- direction_same:0, 1 (feature meaning: whether the restaurant/bar is in the same direction as your current destination)
- direction_opp:1, 0 (feature meaning: whether the restaurant/bar is in the same direction as your current destination)
- Y:1, 0 (whether the coupon is accepted)