**Homework 08: Modeling Credit Card Customer Behaviors**

I wrote Modeling Credit Card Customer Behaviors using R programming language by following the steps below.

1. Install required package, library in (AUC, onehot, xgboost ).
2. I reading training, test and label file.
3. Define normalize function.
4. Removes the first variable(id) from the data set.
5. I called encoder function.
6. I generate training and test data set prediction.
7. I called xgboost function.
8. I calculator training\_scores function.
9. I calculator test score function.
10. Test scoring convert normalize
11. All result in writing a file.

Step = 1

[1] train-auc:0.735296

[2] train-auc:0.762007

[3] train-auc:0.778459

[4] train-auc:0.792402

[5] train-auc:0.803426

[6] train-auc:0.814454

[7] train-auc:0.823378

[8] train-auc:0.832547

[9] train-auc:0.838937

[10] train-auc:0.846428

[1] 0.8464275

Step = 2

[1] train-auc:0.764019

[2] train-auc:0.805303

[3] train-auc:0.827742

[4] train-auc:0.842955

[5] train-auc:0.859026

[6] train-auc:0.872634

[7] train-auc:0.881851

[8] train-auc:0.890108

[9] train-auc:0.896469

[10] train-auc:0.904247

[1] 0.9042467

Step = 3

[1] train-auc:0.792832

[2] train-auc:0.810093

[3] train-auc:0.820696

[4] train-auc:0.827583

[5] train-auc:0.834752

[6] train-auc:0.840991

[7] train-auc:0.847191

[8] train-auc:0.853845

[9] train-auc:0.860749

[10] train-auc:0.865228

[1] 0.8652279

Step = 4

[1] train-auc:0.824520

[2] train-auc:0.840773

[3] train-auc:0.851581

[4] train-auc:0.857312

[5] train-auc:0.862891

[6] train-auc:0.867462

[7] train-auc:0.871392

[8] train-auc:0.876355

[9] train-auc:0.880189

[10] train-auc:0.883628

[1] 0.8836283

Step = 5

[1] train-auc:0.750681

[2] train-auc:0.773944

[3] train-auc:0.785716

[4] train-auc:0.794632

[5] train-auc:0.804209

[6] train-auc:0.812089

[7] train-auc:0.819345

[8] train-auc:0.827055

[9] train-auc:0.832465

[10] train-auc:0.837705

[1] 0.837705

Step = 6

[1] train-auc:0.774349

[2] train-auc:0.794875

[3] train-auc:0.805788

[4] train-auc:0.817342

[5] train-auc:0.823180

[6] train-auc:0.828533

[7] train-auc:0.835768

[8] train-auc:0.843198

[9] train-auc:0.847198

[10] train-auc:0.851384

[1] 0.8513844

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