

## Lab 9/Homework 4

Due on Dec 3 2018, you need to submit both electronic copy and hardcopy.

Download the kkbox-churn-prediction-challenge training data file from kaggle.

<https://www.kaggle.com/c/kkbox-churn-prediction-challenge>

Following the sample codes Lab9.R, split the training data into two parts, one for training and one for testing. In the sample codes, we show how to train and test using Lasso (logistic regression + L1 regularization) and SVM.

1. Train a **Random Forest** on the training data part, and test it on the testing data part. Report the training and testing AUCs, respectively.
2. Train a **neural network** on the training data part, and test it on the testing data part. Report the training and testing AUCs, respectively.

For Q1 and Q2, please also submit your R codes for obtaining your results (e.g. like the Lab9.R).

3. Given the following prediction, please compute its AUC manually.

Sample ID	Predicted Value	Sample Label
1	0.9	1
2	0.5	1
3	0.4	1
4	0.6	0
5	0.3	0