FEM11152 – Data Science for Marketing Analytics

Case 5a

In this **2-page** report, you will perform a classification analysis with neural network on data set Churn.csv. This data set comes from a bank which is investigating a very high rate of customers leaving the bank. It contains nine variables, including a dependent variable (Exited) indicating whether a customer leaves the bank or not, and eight independent variables pertaining customers' profiles. The target is to build a neural network to classify if a customer intends to leave the bank soon.

In the **2-page** report, you are expected to answer following questions, and your answer will be assessed based on the rubrics presented on canvas.

1. Explain the basics of neural network (what is it and how it works?)
2. Briefly summarize the problem and explain your data preparation.
3. Divide the data set into a training and testing subset. To solve a classification problem, you should first check whether the data set is skewed or imbalanced before data splitting.
4. Use the training subset to train the classifier and assess the trained classifier with testing data set.
5. Hyperparameter tuning is left to you (optional).
6. Provide content-based interpretation of the results.