

Understanding the Problem:

- The bank is willing to sell term deposit product (meaning that you lock away an amount of money in the bank for an agreed length of time).
- They want to target clients who have previous interactions with the bank. This will reduce the money spend on the campaign.

The Data Set:

- The Data Set has data of a marketing campaign that is based on phone calls while the bank will be using tele, SMS, email and more.
- The data set is imbalanced:
 1. Differences in distributions of classes
 2. Biased towards a class, resulting in the algorithm being biased to the same class.

<https://machinelearningmastery.com/what-is-imbalanced-classification/>

<https://towardsdatascience.com/handling-imbalanced-datasets-in-machine-learning-7a0e84220f28>

<https://www.kdnuggets.com/2017/06/7-techniques-handle-imbalanced-data.html>

<https://www.youtube.com/watch?v=JnIM4yLFNuo>

The variables are under 5 categories:

- 1- Client Data
- 2- Client's last contact of current campaign
- 3- Campaign related
- 4- Social and economic

And those will be the model's input.

- 5- whether the client subscribed to a term deposit or not

And this will be the model's output.

Tasks from week 7 until week 13:

1. Business Understanding
2. Data understanding
3. Exploratory data Analysis
4. Data Preparation
5. Model Building (Logistic Regression, ensemble, Boosting etc)
6. Model Selection
7. Performance reporting
8. Deploy the model
9. Converting ML metrics into Business metric and explaining result to business
10. Prepare presentation for non technical persons.

Week 7: Business Understanding

- Describe the problem
- Understand the business

Week 8: Data Understanding

- Describe the problem
- Understand the data
- Problems in data
- Data Cleaning Approach.

Week 9: Data Preparation

- Data Cleaning
 - Each member should use different approach

Week 10: EDA

- EDA and recommendation

Week 11: Prepare presentation for non technical persons.

- Presentation for business users
- Include recommended model for technical users.

Week 12: Model Building and Model Selection

- Select Model
- Explore 1 model of each family
 - Merging code of team members is allowed

Week 13: Performance reporting and Deploy the model and Convert ML metrics into Business metric and explaining result to business

- As team members, discuss results and choose best approach.
- Merge code
- Write a performance report