Customer Analytics for Targeted Marketing

**1. Executive Summary**

*Describe briefly (1-2 paragraphs) what you have accomplished in this project: the research question and the conclusions.*

Advising a medium size bikes & cycling accessories company how to best optimize its marketing strategy with transactional and customer data.

Business question: how to target high value customers for next marketing campaign, based on customer and transactions data.

**2. Summary of Learning**

*Describe briefly (1-2 paragraphs) you have learned in this project– for example, challenges, interesting findings, new approaches and how to learn by yourself.*

Using business question as context to guide the project

Incorporating additional data to existing data

Defining a meaningful target variable

Customer segmentation / classification

Choosing the “best” model based on business case and assumptions

Standardizing date columns across data sets

Choosing imputation or removal

EDA before or after data split

High cardinality of categorical variable

Incorporating more data using address and zipcode

**3. Dataset**

*Describe briefly (1-2 paragraphs) the dataset you used in this project, including the data sources, how did you get the data (download the data or scrap data through web pages or API) and what the data is about.*

**4. Exploratory Data Analysis**

*Describe the methods you have used for exploratory analysis of the data. You may use Rmarkdown file to record you exploratory data analysis process, \*knit\* to generate a pdf file named ‘ExploratoryAnalysis’ and include the* ***rmd and pdf*** *file in the final submission.*

*Or you can put your visualization results here and include your* ***rmd or r*** *file in the final submission. Do not put code in this report.*

*You may include the following steps:*

1. *Statistical summary of the data. Then describe what you find.*
2. *Data visualizations. Add 2-3 sentences to describe what you find for each plot you draw.*
3. *Statistical test. Add 2-3 sentences to describe what you conclude based on the test results.*

**5. Model Development**

Multinomial Logistic Regression

Regularized Logistic Regression

Decision Trees

Random Forest

K-means Clustering

**6. Model Performance**

*Describe the models you built with the data. You may use Rmarkdown file to record all the models you have built, \*knit\* to generate a pdf file named ‘Models’ and include the* ***rmd and pdf*** *file in the final submission.*

*Or you can report the models and results here; and include your* ***rmd or r*** *file in the final submission.*

*You can choose to build supervised models or unsupervised models.* ***Build at least three different models****. For each model you built, add several sentences to describe what you find, how to evaluate the model and what is the model performance.*

**7. Model Interpretation**

**8. Limitations**