CIS9557 Group Project: Analyzing Customer Campaigns (US PacWest usecase)

# Introduction

# One of the biggest challenges of any business is to grow their business through effective marketing. As a Marketing manager, you want to understand your customers, what they want and what really drives them, so that you can sell to them more effectively.

# Dataset

The data contains the following attributes. The variables in red are the target variables

|  |
| --- |
|  |
| Customer ID  State  Location Code  Gender  Marital Status  Education  Employment Status  Income (USD)  Effective To Date  Customer Lifetime Value (USD)  Coverage  Monthly Premium Auto (USD)  Number of Policies  Policy Type  Policy  Months Since Policy Inception  Months Since Last Claim  Sales Channel  Response  Renew Offer Type  Number of Open Complaints  Total Claim Amount (USD)  Vehicle Class  Vehicle Size |

# Task I: Determinining Response to campaign

The task is to develop a classifier that is able to determine whether a customer will respond to the campaign. The students should build a predictive model on the training set and then apply their predictive model to the scoring set.

The winning team is the team with the highest F-measure value.

For each of the models you train, create a table that includes the model name, accuracy, precision, recall, and f-measure. Out of all the models highlight the one you consider your top model. You will use this model to score the dataset I will provide to you.

# Task II: Determinining characteristics of customers that responded to campaign

In task 2, the teams will conduct a customer segmentation that describes likely respondents. Choose an optimal number of segments and label them in a meaningful way.

# Task III: customer lifetime value

The third task is to develop an estimator (or classifier) that is able to determine the customer lifetime value (CLV). Teams should also describe what drives CLV values and what the target market is for this insurance company.

The winning team will have the lowest mean square error in the scored dataset and an accurate description of the target market for the highest CLV.

# Written Report

## Description:

By the final week, students will be required to submit a full written report of the data mining project. The project will serve as a practical learning experience in understanding various issues in data mining. If no significant discoveries are found, students should be able to describe the data mining process, data mining application and the potential benefits of expected findings.

The document should summarize the findings and archive **the processes** and method used:

1. Identifying the business problem
2. Data Understanding and data Cleaning

*Tip: You can load the data into Tableau to get a better idea of the data and the relationship between variables.*

1. Feature Selection
2. Model Building and Evaluation (I will expect to see the results of your 3 best models)
3. Scoring the Dataset
4. Create a business strategy based on the insights found

### Grading:

The grade will be based on the clarity, completeness, and demonstrated understanding of the written report. Each team member will be expected to participate equally in preparing the report. Students are expected to use graphs and charts where useful.

The Oral presentation grade will be based on instructor grading, which will consider client feedback and peer evaluations.

# Grading rubric for project

18/20 for project, 2 points for peer evaluation

Team peer evaluation

2 – Excellent

1 – Average

0 – Poor

|  |  |  |  |
| --- | --- | --- | --- |
| **Area** | **Points Assigned** | **Points** | **Score** |
| Data Understanding and Cleansing | 3 | Ranging from 3 excellent to 0, not completed |  |
| Feature Selection | 3 | Ranging from 3 excellent to 0, not completed |  |
| Model Evaluation | 2 | Ranging from 2 excellent to 0, not completed |  |
| Scoring of Dataset | 2 | Ranging from 2 excellent to 0, not completed |  |
| Presentation | 4 | Ranging from 4 excellent to 0, not completed |  |
| User’s Manual including Business problem and strategy | 4 | Ranging from 4 Professional to 0 Unprofessional |  |
| Total | 18 |  |  |

Two points are reserved for team evaluation

**Tools:**

The student is allowed to use any of the tools described in class. Make sure you include screenshots at the different stages of the process.