

## COM6101 Marketing Analytics with Machine Learning

### Group Project Specification

Number of students in each group: **3-4**

- Due dates:**
- 25 February (Sunday) 23:59 for group formulation due**
  - 6 March 2023 (Wednesday) 23:59 for one page project proposal**
  - 7 April 2023 (Sunday) 23:59 for Powerpoint slides & program codes (tentative)**
  - 8 April (Week 12) and 15 April (Week 13) for group presentation (tentative)**
  - 5 May 2023 (Sunday) 23:59 for final report**

The purpose of this group project is to allow students to apply the machine learning techniques they have learned in solving a real-world marketing problem.

### Tasks

- Suppose you are marketing manager of a company. Propose a valid marketing problem you want to solve by using machine learning.
- Data collection
  - Find appropriate datasets (e.g., internal, external and/or alternative data) for your marketing problem.
  - You may combine multiple datasets and modify the data (or even create artificial data) to fit your needs.
- Data processing
  - Perform necessary data processing tasks, e.g., data pre-processing, exploratory data analysis, etc.
- Machine learning
  - Select and implement appropriate machine learning algorithm(s) to solve the problem.
- Performance analysis
  - Analyze the machine learning performance and results.
- Marketing strategy
  - Suggest appropriate marketing strategies for the problem according to your interpretation of the results.

### Final Report (Include all the following documents in your final report)

- Write a group report that depicts the details of all the tasks above.
  - At least five A4 pages.
  - Quality is better than quantity.
- Write an individual self-reflection by each group member.
  - Your role and contribution(s).
  - Your observations on any issues with the group project and suggestions for improvement.
  - 400 – 500 words.
  - Note that this part will be individually accessed. Please write down your name and student ID for your self-reflection.

- Complete and sign the project contribution form by all the group members.
  - Note that your group project will not be graded if the form is not submitted and completed.

### **Presentation**

- Delivery a group presentation in English for the project.
- Each group will be given not longer than 15 minutes for the presentation.
- Every member must participate in the presentation for at least 3 minutes.

### **Assessment Criteria**

- This group project covers 30% of the total module mark.
- The project will be assessed based on the following (in total 100%):
  - ***Creativity (25%)***: the novelty and scope of your marketing problem.
  - ***Technical Implementation (25%)***: the completeness and correctness of your implementation.
  - ***Analysis (25%)***: the quality of result interpretation.
  - ***Presentation (15%)***: the quality of your oral presentation and report writing skills.
  - ***Contribution (10%)***: the degree of your contributions and self-reflection.

### **Submission**

- Each group will need to submit a project proposal first (at most one A4 page) to briefly state your marketing problem, and what datasets and algorithms your group plan to use.
- All your Python program code and dataset files (in a .zip file).
- Your presentation slides in .pptx format.
- Your group project final report in .pdf format.

### **Plagiarism**

- Any form of plagiarism (program code and report) may result in a significant mark reduction and disciplinary action(s).
  - Your program codes and report will be scanned by anti-plagiarism platforms.

### **Tips**

- Do not make the scope too large since you may have only 5-6 weeks working for your project.
- You do not need to limit yourself to the machine learning algorithms you have learned from this module. Any machine learning algorithm that is suitable for solving your problem can be used.

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