BT5153
Applied Machine Learning for Business Analytics
Academic Year 2025/2026 Semester 2
Lecturer: Dr. Rui ZHAO

Project Guidelines and Grading Criteria
Updated as of 9th Jan 2026

Project Description

The course project is aimed at allowing students to gain some hands-on experience in solving applied machine learning problems. In this project, you are asked to apply relevant machine learning tools and techniques that you have acquired (of course, you are welcome to go beyond the scope of the course) to mine useful insights and arrive at meaningful conclusions for a real-world application. You are required to complete this project in groups of **4-5**, delivering three (3) components: Group Project Proposal, Group Project Presentation, and a Group Project Final Report. The **entire** Group Project will contribute **40%** to your overall grade. Details of each component, its requirements, and the respective grading criteria will be specified below.

Disclaimer:
Individuals in the same group will generally receive the same scores for all components of the Group Project, unless feedback is received that a particular member is only superficially participating and not doing actual work. Please voice out your concerns to the lecturer if you think it is necessary.

Important things to note:
Please name your files in the following format - proposal**XX**.pdf for Group Project Proposal, video**XX**.mp4 for video submission, report**XX**.pdf for Group Project Final Report and presentation**XX**.pptx for Group Project Presentation where **XX** is your group number. For example, **Group 1**'s report should be **report01.pdf**. **If not, your submission will be penalized for 2 points.**

Project Component	**Due Date and Time**	**Submission Items**
Group Project Proposal	01 March 2026 @23:59	PDF Report
Group Project Presentation	26 April 2026 @23:59	Digital Video (file format .mp4)
Group Project Final Report	26 April 2026 @23:59	PDF Report Presentation Slides Completed Codes

Group Project Proposal

When to submit: 01 Mar 2026*, Sunday by 23:59*
Who to submit: A representative from each group
What to submit: PDF report
Where to submit: ***Canvas > Group Project Proposal***

Guidelines

You are to submit a **1-2 pages PDF report** to draw the map to our business goal. It should cover the following information:

1. Intent (Why?)
    a. What's the problem we're trying to solve, or the opportunity we want to gain from? How will customers benefit? *Why* are we doing this, and *why* is it important?
2. Desired outcome (What?)
    a. how success looks like. How well should we solve this problem? How do we measure it? In data science, this is usually a business metric such as conversion, savings from fraud reduction, net promoter score, etc.
3. Deliverable (How?)
    a. How should we solve this problem?
4. Constraints (How not?)
    a. How *not* to solve a problem

You can check the following blog to understand the importance of the one-pager before any ML & DS project and what would be a solid one-pager.
https://eugeneyan.com/writing/what-i-do-before-a-data-science-project-to-ensure-success/#first-draw-the-map-to-the-destination-one-pager

Grading Criteria

The Group Project Proposal weighs **5%** of your overall final grade. Your proposal will be evaluated based on:

1. Concision of the introduction of your intent/desired outcome/deliverable/constraints
2. Description of the data and data collection methods (if any)
3. Correctness of the description of the methods you foresee applying

Basically, if you were to put in a decent amount of effort to do a proper write-up of the proposal, you will be awarded the 5%. And of course, you are saving yourself some time when you proceed to write the final report.

Group Project <u>Presentation</u>

When to submit: 26th April 2026, Sunday by 23:59
Who to submit: A representative of each group to submit
What to present: 15~20 minutes worth of slides containing highlights of your analysis
Where to submit: ***Canvas > Group Project Presentation Video***
Important: ***<u>Every member of the group should have a share in presenting</u>***

<u>Guidelines</u>

1. You are to prepare **15-20 minutes** worth of slides for presentation. The flow and content (please select the highlights of your analysis) of the presentation can follow that of the Group Project Final Report. However, your presentation should be understood by itself, you may assume that the viewers have not read your project paper.
2. Focus on identifying what is novel and interesting. Emphasize the problems or issues being addressed. Share your understanding and experiences upon how the work is done. Have a thread, a narrative, tell a story.
3. You must include the title and group members at the beginning of the video, either as the first page of your slides or as an overlay text. Make sure that you leave the title for long enough of a duration to be read (up to 8 seconds).
4. The submitted video can be the recording video of your computer screen. Here, some screen capture softwares are recommended (For Window users, **Camtasia** and **Camstido**. For Mac OS users, the **quicktime player**).
5. Record your presentation in the highest possible image and audio quality. Please ensure that your submitted video will play.

<u>Grading Criteria</u>

The Group Project Presentation weighs **20%** of your overall grade.

Group Project Final Report

When to submit: 26th April 2026, Sunday by 23:59
Who to submit: A representative of each group to submit
What to submit: PDF Report + Presentation Slides + Completed Codes
Where to submit: ***Canvas > Group Project Slides***
Canvas > Final Report
Canvas > Code & Data (dataXX.zip and codeXX.zip where XX is the group number)

Guidelines

You are to submit an **8-10 page PDF report** that extends/continues from your Group Project Proposal. A suggested outline of the Group Final Report includes:

1. A description of the problem (As stated in (1) of project proposal) or any minor adjustments if any
2. Some basic facts of the dataset(s) (As stated in (2) of project proposal)
3. A detailed discussion of the following:
    a. Pre-processing steps to sanitize/manipulate/combine your dataset(s)
    b. Machine learning models that you have used (E.g., Unsupervised? Supervised?) (Somewhat an extension of (5) of project proposal)
    c. The insights that you have gathered from applying machine learning methods on the dataset(s)
4. Conclusion
5. References: Must include a bibliography listing all references (including URLs, if any) cited
6. **You should also upload your code and data to Github and include a link to the code in the final paper. And it is suggested that you can include a README file with the code documenting what everything is and what commands you ran.**

Required Format

The use of a 10-point Times font is mandatory. The formatting should be referred to **ICML style**. The word template could be found **here**. The latex template is also provided in the **overleaf**. The file size limit is **30MB** per file. If the data file size is too large, submit a representative subset of the original data.

Grading Criteria

The Group Project Final Report weighs **15%** of your overall final grade. Your report will be evaluated based on:

1) Clarity and completeness of the report
2) Appropriateness of the models and methods applied for analysis

3) Coherence and consistency of proposed methods with hypotheses
4) Usefulness of your analysis in other similar real-world problems
5) Concise summarization of your work
6) Reasonability of the discussion of advantages and limitations of applied methods to the defined problem

All the best for your project!

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