COMP809: Data Mining & Machine Learning

Assignment 1 – Part A (weight: 30%)

2021 Semester 2

Literature Review of Data Mining Applications in Industry
Report Guideline

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1. Assessment tasks

The objective of this assignment is to conduct preliminary research on data mining used in various application domains. The survey is intended to assist you in establishing a suitable framework (application area, tools, algorithms) on which your mining project will be based.

To achieve this objective, you need to follow the steps below:

1. This is an **individual assignment**.
2. Select a topic based on the **application domain** stated in Section 2: Topics or you can come up with your own.
3. Read and analyse peer-reviewed papers (**minimum of 6 including reference**) on your specific topic.
4. From your research identify at least two themes and discuss these themes by comparing them from the various papers in your research. Some examples of themes are listed below:
   - Approaches/algorithms to solve the problem.
   - Scientific results from experimentation
   - Perspectives on an issue
   - Advantages/disadvantages
   - Effects of an issue
5. Express your own opinions, e.g., new ideas, proposed approaches/models, how to extend theexisting work, etc. Your opinions about **machine learning and data mining related issues** should be presented.
6. Write the report using LaTex / Word. **Minimum 4 pages (include references) and no more than 6 pages** in 2 columnsIEEE proceedings format

2. Topics

You can pick one of the following topics or come up with your own.

- Healthcare
- Banking and finance
- Retail
- Product Recommendation
- Computer Vision
- Customer Relationship Management
- Fraud Analysis

3. Layout for Research Report

The research report must include:

- Title
- Abstract
- Introduction

- Background/motivation
- Comparison of related work (from peer-reviewed sources)
- Your opinion – new ideas, proposed approaches/models, how to extend the existing work
- Conclusion and future issues
- References

4. General guidelines

- Your submission must be individual work.
- **Minimum 4 pages (include references) and no more than 6 pages** in 2 columns IEEE proceedings format – the wordand LaTex template is available on Blackboard.
- Minimum 6 full and consistent electronic references from peer-reviewed sources.
- References must be clickable in the content of the report as well as the Reference list (important for efficient marking).
- "Your opinion" section is a very important part of the report. In this section, you will present your own thoughts about the existing works. Based on this you will give your opinion on how the existing work can be improved further. Your opinions about **data mining and machine learning related issues** should be presented. This section should consist of at least half of a page.

5. What to submit

- Research report in a **PDF** file.
- **Note:** the above file should be named with your family name and student ID e.g.,Smith_12345.

6. When to submit

- Due date: Sunday 22nd August, 11:59 P.M.
- Late penalty: maximum late submissions time is 24 hours after the due date. In this case, **5% late penalty** will be applied.

7. How to submit

- All assessments should be submitted through Blackboard Turnitin Link.
- NOTE: If you are using any material or figures in the assessment that is not your own, do remember to cite/reference the source.
- All assessments will be assessed through the Turnitin system and in case of plagiarism the University policy against plagiarism will be applied.

8. Marking Guide of Research Report

Report Component	Marks (indicative)
Abstract	**/10**
The abstract should be one paragraph and it should cover the whole theme of the report.	
Introduction	**/10**
The introduction part should introduce the topic and its importance. It should also include at least one diagram related to the topic.	
Background/motivation	**/15**
The background is important to understand the topic in depth while motivation presents the importance of the topic statement of objectives; two themes identified for the report should be clearly stated. One and a half pages are sufficient for this section and introduction.	
Related work/literature review	**/15**
Related work should comprise the reviews of the current state of knowledge relevant to the topic. Comparison and contrast between different authors/approaches should be clear. One page should be enough for this section.	
Your opinion	**/20**
This is an important section in which the student will criticise the existing work and will present his/her own opinion about how to improve it further? This section should reflect some research insight developed by the student. Your opinions about **data mining related issues** should be presented. Half of a page is sufficient.	
Conclusion and future issues	**/15**
In this section, students will draw conclusions on the given topic. In other words, it is a brief summary of the work presented in the research report. You also need to discuss at least two future issues on the topic.	
References and report presentation	**/15**
All references should be from peer-reviewed journals and conferences. Theymust be clickable in the document. Each report should include at least 6 peer-reviewed references.	
Late submission penalty	**-/5**
TOTAL MARKS	**/100**