UNIVERSITY OF CALGARY

ENEL 645 – Final Project Description and Rubric

For the final project, teams should choose a problem/topic of interest and try to solve it using deep learning methods. Ideally, the problem/topic of the project will align with the research interests of the team members. The team final project corresponds to 60% of the course final grade. There are three components to the final project:

- Project proposal (10% of final grade)
- Midterm project report and presentation (20% of final grade)
- Final project report and presentation (30% of final grade)

The project proposal, midterm report and oral presentation, and final report and oral presentation projects will be prepared by all students in the group and must be submitted by the prescribed deadlines. Detailed instructions on the preparation and formatting of the project deliverables are given below. The course instructor may suggest modifications to the project proposal, if the project is deemed inappropriate. The course instructor and TAs will mark the proposal, midterm and final reports and oral presentations according to the scheme presented below.

Description of the final project components

1. Project proposal

The project proposal consists of a two-page maximum document describing the problem the team intends to solve using deep learning. The document should:

- Detail the motivation and significance of the problem being approached.
- Include relevant references (well cited, high impact factor journals, etc.).
- Present a timeline for the project completion and projected workload split between team members.
- Include methodological details based on their literature review and what they learned in class. It is ok if the methods you use at the end of your project is different from the one you include in your proposal. Some methodological details that can be included are:
  - Approach to be used (*e.g.*, supervised versus unsupervised)
  - Model that will be used
  - Datasets to be used
  - Metrics to assess the results
  - ...

Teams can include up to two figures and/or tables and their corresponding captions limited to a maximum of 150 words per caption. The references and figures and/or tables do not count towards the two-page limit. The team should also include a one-page description of what each team member did in the assignment. On that page, the team should also include a consensus score to each team member. This score ranges between 0 and 3 and it will be used to adjust the final grade of each student. Students developing the project individually do not need this description and score. The project proposal needs to be submitted in pdf format on the corresponding group D2L dropbox by 15 February 2021, 11:59 pm.

2. Midterm report and presentation

Report: The midterm report consists of a four-page maximum document describing the current state of the project. The document should:

- Detail the motivation and significance of the problem being approached.
- Include relevant references (well cited, high impact factor journals, etc.).
- Describe and discuss the current methodology employed by the team to solve the problem.
- Present and discuss the preliminary results achieved by the team and future steps to conclude the project successfully.

Teams can include up to four figures and/or tables with their corresponding captions limited to a maximum of 150 words per caption. The references and figures or tables do not count towards the four-page limit. The team should also include a one-page description of what each team member did in the assignment. On that page, the team should also include a consensus score to each team member. This score ranges between 0 and 3 and it will be used to adjust the final grade of each student. Students developing the project individually do not need this description and score.

Presentation: The midterm presentation is a ten-minute maximum recording presenting the current state of the project. The presentation should touch on all points that are described in the midterm report. All team members should speak during the presentation preferably in a balanced manner.

The midterm report corresponds to 15% of the final grade and the midterm oral presentation the remaining 5%. The midterm report in pdf format and oral presentation video need to be submitted on the corresponding group D2L dropbox by 13 March 2021, 11:59 pm, Calgary time.

3. Final Report and Presentation

Report: The final report consists of a six-page maximum document describing the complete project. The document should:

- Detail the motivation and significance of the problem being approached.
- Include relevant references (well cited, high impact factor journals, etc.).
- Describe and discuss the final methodology employed by the team to solve the problem.
- Present and discuss the final results achieved by the team.

Teams can include up to six figures and/or tables with their corresponding captions limited to a maximum of 150 words per caption. The references and figures or tables do not count towards the six-page limit. The final report should have the link to a GitHub repository with the code developed by the team during the project. The team should also include a one-page description of what each team member did in the assignment. On that page, the team should also include a

consensus score to each team member. This score ranges between 0 and 3 and it will be used to adjust the final grade of each student. Students developing the project individually do not need this description.

Presentation: The final presentation is a ten-minute maximum recording presenting the completed project. The presentation should touch on all points that are described in the final report. All team members should speak during the presentation preferably in a balanced manner.

The final report corresponds to 20% of the final grade and the final oral presentation the remaining 10%. The final report in pdf format and oral presentation need to be submitted on the corresponding group D2L dropbox by 15 April 2021, 11:59 pm, Calgary time.

It is expected to have some degree of overlap between the project proposal, the midterm and final reports. That is okay!

Document Formatting Rules

Prepare your attachments in any word processing program (Microsoft Word, LatTex, Overleaf), following the requirements below:

A) Explain any acronyms and abbreviations fully;

B) Pages must be 8 ½" x 11" (216mm x 279mm);

C) Pages must be single-spaced, with no more than six lines of type per inch;

D) All text must be in 12 pt Times New Roman font;

E) Condensed fonts will not be accepted;

F) Margins must be set at a minimum of ¾" (1.87 cm);

G) The first page should contain the project title and the names of the team members;

H) The pages should be numbered.

Suggested Sections for the Written Components

1. Introduction

2. Material and Methods

3. Results and Discussion (midterm and final report only)

4. Project Timeline (research proposal only)

5. References

6. Figures and Tables

7. One-page description of what each team member did, and scores assigned to each team member

Rubric

Each of the components of the final project (proposal, midterm report, midterm presentation, final report, and final presentation) will be given a score between 0 and 100 and will be weighted accordingly to obtain the final grade, which corresponds to 60% of the final grade.

Written Components Assessment

This rubric is valid both for the midterm and the final reports.

Based on the team score, the final grade of each team member is adjusted according to the table below.

Score	Meaning	Grade Adjustment
0	No contribution to the project	Automatic 0
1	Little contribution to the project	20% reduction to the final grade
2	Moderate contribution to the project	10% reduction to the final grade
3	Significant contribution to the project	No grade reduction

The total grade of the written component is assessed based on the table below and the grade is assigned to the team.

	Exceeds Expectations (85-100)	Meets Expectations (75-84)	Needs Improvement (65-74)	Below Expectations (0-64)
Content Formatting Rules 10 points	- The written document fully adheres to the formatting rules.	- The written document adheres to most of the formatting rules	- The written document adheres to some of the formatting rules	- The written document does not follow any of the formatting rules
Content Writing quality 20 points	- Extensive details and relevant examples. - All information was accurate and delivered effectively. - Terminology made the ideas in the project clear.	- Subject knowledge was evident. - Included details and examples to answer the essential question.	- Information related to the topic, but project needed more details and examples to fully support ideas. - Work showed little student interpretation.	- Information did not include details or examples from reliable sources. - Information was not sufficient to make successful argument.

		- Used proper terminology and vocabulary.	- Used the wrong terminology to describe the topic.	–Used inappropriate terminology or vocabulary.
Content* Introduction (Literature review) 15 points	- Provides an excellent overview of the literature and is sufficiently detailed as to important findings, key themes, etc. - Literature selected is appropriate for the topic (e.g., primarily peer reviewed, relevant studies; grey literature included if appropriate). - Reviews and cites at least 15 relevant references	- Includes most of the relevant literature but misses some key points. -Literature chosen is mostly appropriate for the topic. - Reviews and cites at least 10 relevant references	- Too few sources discussed. - Some of the literature chosen is appropriate for the topic. - Reviews and cites at least 5 relevant references	- No literature is reviewed, or the reviewed literature is inappropriate - Reviews and cites less than 5 references
Content Methods 20 points	- Investigates and uses appropriate methods for the problem at hand - Uses a sound experimental setup	- Investigates and uses methods that could be appropriate for the problem at hand -Uses an experimental setup that seems correct	- Investigates and uses methods that do not seem to be appropriate for the problem at hand -Uses an experimental setup that is not the most appropriate to assess the methods	- Investigates and uses methods that are not appropriate for the problem at hand -The experimental setup is inconsistent
Content* Results and Discussion 20 points	- The results are reported using many appropriate objective metrics - The results are discussed an interpreted in depth pointing to the advantages and disadvantages of the proposed method	- The results are reported using a limited number of appropriate objective metrics - The results are discussed and interpreted. - Some of the advantages and disadvantages of the proposed method are discussed	- The results are reported using metrics, which may not be the most appropriate for the problem - The results are discussed superficially - The advantages and disadvantages of the proposed method are discussed very briefly	- The results are not reported using quantitative metrics - The results are not discussed - The advantages and disadvantages of the proposed method are not discussed

Content Quality of Tables and/or Figures 15 points	- The report makes use of tables and/or figures to clearly transmit ideas, concepts and results - The figures have outstanding quality	- The report makes use of tables and/or figures to transmit ideas, concepts and results - The figures have good quality	- The report makes use of tables and/or figures to transmit ideas, concepts and results, but these tables and/or figures can confuse the reader - The figures have low quality	- The report does not make use of tables and/or figures

For the categories marked with a *, groups with three people or less will be bumped to "exceeds expectations" if they fall under the "meets expectations" category.

<u>*Oral Components Assessment*</u>

<mark>Team members who do not present automatically get a zero in the oral component. There are no other adjustments to the oral presentation grade.</mark>

<mark>Oral presentation grades are assigned to the team.</mark>

<mark>This rubric is valid both for the midterm and the final presentations.</mark>

	Exceeds Expectations (85-100)	Meets Expectations (75-84)	Needs Improvement (65-74)	Below Expectations (0-64)
Oral Presentation Overview Eye contact, voice, and appearance 10 points	-Used eye contact. -Confident, expressive, and knew content well. - Dressed up or in appropriate costume. - Had good posture, was mobile, and used gestures and facial expressions to make their point.	- Often made eye contact. - Voice was steady and clear. - Used appropriate facial expressions and gestures. - Knew content well. - Dressed up. - Had good posture.	- Made some eye contact. - Voice was soft or monotone. - Appearance was casual but neat. - Presenter rocked back and forth.	- Made no eye contact. - Used low, soft, or monotone voice. - Read from a script. - Appearance was too casual or sloppy. - Posture was slouched.
Oral Presentation Clarity and volume	- Appropriate volume throughout presentation. - Varied	- Spoke clearly and understandably. - Spoke at an appropriate volume	- Spoke quietly. - Increased volume briefly after being	- Barely audible, even after requests to speak up.

10 points	volume when appropriate. - Proper inflection throughout presentation.	for most of presentation. - Good inflection and enunciation. - Occasionally sounded monotone.	asked. - Spoke with little inflection.	- No inflection. - Sounded bored or uninterested. - Paid little attention to proper pronunciation.
Oral Presentation Stays on Topic Relevant to the topic 20 points	- Entire presentation focused on the topic. - Able to answer audience questions without straying from subject.	- Majority of presentation was on-topic. - Made effort to return to topic when presentation or audience questions strayed.	- Some material was unrelated to the topic, or presenter used unrelated material to pad the presentation.	- More than half of the presentation did not directly address the topic.
Oral Presentation Content Relates to topic, detailed, and accurate 20 points	- All content directly related to the topic. - Content was thoroughly developed and demonstrated detailed knowledge of the topic. - Opinions were supported by fact wherever possible.	- Content directly related to the topic. - Included many details that demonstrated knowledge of the topic. - Most opinions were supported by facts.	- Had difficulty explaining how the content and topic relate. - Many opinions were not factually supported.	- Presentation did not relate to topic. - Included few details and relied heavily upon unsupported opinion.
Oral Presentation Vocabulary Appropriate word choice 20 points	- Vocabulary was outstanding. - Word choice was professional but not artificial. - Smoothly incorporated topic-specific vocabulary.	- Consistently used a scholarly vocabulary. - Successfully used topic-specific vocabulary. - Did not use any Inappropriate language.	- Vocabulary was too casual. - Attempted to use topic-specific vocabulary. - May have used inappropriate language on one occasion.	- Did not speak in a scholarly or professional manner. - Used little or no topic-specific vocabulary. - Used inappropriate language two or more times.

			- Misused words in an effort to seem scholarly.	
Oral Presentation Knowledge Demonstrate knowledge of subject 20 points	- Demonstrated a thorough knowledge of the subject matter. - Able to use audience questions to further demonstrate understanding of the topic. - Appeared to be an expert on the subject being presented.	- Demonstrated a working knowledge of the subject matter. - Able to satisfactorily answer audience questions and provided additional information upon request.	- Demonstrated a basic knowledge of the subject matter. - Able to address audience questions by repeating parts of the presentation - did not provide any additional information.	- Demonstrated little or no knowledge of the subject. - Unable to answer audience questions or comment further on any part of the presentation.