COMP6713 2025 – T1

Congratulations on registering your project teams! This document will help you define the scope of your project.

The following table will help you plan the scope of the project. You must accrue a minimum of 80 credits while completing the minimum credits in each of the four parts. **The scope document is applicable for both self-selected projects and the industry project.**

PART A: Problem Definition **Minimum: 10 credits**			**Fill your project details here**
	Points	**Details**	
NLP Problem	5 credits per problem	Examples: Question-answering, Sentiment Analysis, etc. (Refer to course modules) (For industry project, specify the research question.)	Single- classification of Chinese news headlines from Toutiao
Text Source/Domain	5 credits per text source/domains	Examples: News Articles, Medical papers, etc.	News Articles
PART B: Dataset Selection **Minimum: 20 credits**			
Use two existing datasets	10 credits	Publicly available datasets. In the case of industry project, it will be the datasets provided.	
Create your own labelled dataset	20 credits	Correct selection of labels, inter-annotator agreement	Toutiao headlines (collected via a Kafka-based big-data ingestion pipeline).Labels are extracted from the section of the website.
Use an existing lexicon	10 credits	Examples: WordNet, medical ontology	Integrate HowNet semantic lexicon ,retrieve pairs for semantic consistency loss.
PART C: Modelling			
Implement a rule-based or statistical model as a baseline	-	Essential. **Please keep this approach simple – this is only a baseline.**	BERT‑base‑Chinese as pre‑trained backbone,fine‑tune BERT‑base‑Chinese on the Toutiao, Implement focal loss in place of standard cross_entropy.
Minimum: 30 credits			
Use an existing pre-trained/fine-tuned model	5 credits per model	You must compare the performance of multiple models to accrue credits, if	

		you are only using available fine-tuned models or only prompting.	
Fine-tune a model based on a dataset	20 credits per out-of-the-box fine-tuning method	Examples: fine-tuned BERT, prefix-tuned LLaMA	Fine-tuned BERT-base-chinese from HuggingFace
Extend a method	30 credits per extended fine-tuning method	Examples of extension: modification of the loss function, incorporation of structured ontology, prompting method other than zero/few-shot prompting, etc.	Integrate HowNet semantic lexicon: during fine-tuning,MSE for synonyms, margin loss for antonyms,combine this term with the classification objective using a weighting hyperparameter λ
Integrate a language model with external tools	20 credits	Usage of a library like LangChain	
PART D: Evaluation **Minimum: 20 credits**			
Quantitative Evaluation	10 credits	Appropriate metrics.	Classification accuracy on test set.
Qualitative Evaluation	5 credits	Examine mis-classified instances and produce common error types	
Command line testing	5 credits	Interface to test out the system. This can be executed using an input argument or input file.	
Demo	10 credits	A simple demo through Gradio (or equivalent).	Gradio demo for interactive headline classification.

Deliverables

The project will be marked out of 25. The distribution is as follows.

1) Code-base: [10 marks]
    a. May be submitted as a Jupyter notebook(s) or a Python repository
    b. Must be well-commented and comprehensible to an NLP layperson.
    c. Assessors will attempt to manually run all components of the code.
2) Report [5 marks]
    a. Report must outline the choices made in parts A to D, as per the table above.

    b. Highlight results, inter-annotator agreement, qualitative analysis wherever applicable.
    c. Justify the choice of the model, tools and techniques, as applicable.
    d. The report must be comprehensible to an NLP layperson.
3) Presentation [5 marks]
    a. All teams must submit a presentation of their project.
    b. The presentation is intended for an advanced NLP audience
    c. The presentation must include a
    d. Expected duration: 7-10 minutes
4) Individual Effort [5 marks]
    a. These marks will be separately awarded to every team member.
    b. The marks will be determined based on peer evaluation and Q&A with the course team.
    c. The course team might reach out to team members to discuss peer evaluation.