

Project Proposal - v2

Overview

In teams of up to 4 people, you will be working on a final project. This assignment is the first part of the final project: the project proposal.

The intention of the project proposal is to get you started on the process of the project. You can check out the project report handout for more details on the final assessment. There will be marks for originality, but it is acceptable to do a literature review as your project. If you are feeling overwhelmed by the project, please talk to me. I'm here to help you find your way!

You don't have to do what you say in your proposal, and can completely change the project afterwards if you want. But it's important to have at least one reasonable plan to start from.

Deliverables

The following must be submitted through MarkUs on the due date.

1. Project proposal in `.pdf` format.
2. If you used large language models, then you must submit all chat transcripts directly related to the preparation of the assignment in `.txt` format.

Due Date

14 February 2025

Project Proposal Details

Collaboration You may work in teams of up to 4 people. If you are having trouble finding a group of people to work with, please email the instructor. Only one proposal needs to be handed in per group.

Length The proposal should be short and not exceed 2 pages.

Format Please use 10pt, 11pt, or 12pt font with standard margins and submit your proposal as a `.pdf`. You may use any typesetting that you wish, but it should be readable. It should also have easily identifiable sections.

Tips and Tricks

Here are strategies for finding a project, in recommended order:

- **Consult the instructor:** This is the most direct way to:
 - Get feedback on project feasibility
 - Learn about potential project ideas
 - Understand resource requirements

- **Examine course readings:** Look for:
 - Limitations in current approaches that could be improved
 - Unexplored applications of existing methods
 - Connections between different papers
- **Explore recent research:** Check recent papers from:
 - Major conferences (NeurIPS, ICML, ICLR)
 - Relevant workshops (examples below)
- **Recent relevant workshops:**
 - 2nd Workshop on Attributing Model Behavior at Scale
 - Workshop on Statistical Frontiers in LLMs and Foundation Models
 - Time Series in the Age of Large Models
 - Foundation Models for Science: Progress, Opportunities, and Challenges
 - Workshop on Foundation Model Interventions

Marking Scheme

This marking scheme is worth 15 marks.

- **Introduction (3 marks)** Describe the idea that you want to pursue.
 - Set the context: if you are trying to solve a certain problem in this project, describe why it is worth solving. If you are trying to prove a certain theorem, describe why it is worth proving.
 - State one or two ideas that you want to pursue (concisely).
 - Describe what it would mean to successfully investigate these idea(s).
 - * If you are trying to prove something, state the theorem that you want to prove.
 - * If you want to come up with a new algorithm, describe the properties that you want this algorithm to satisfy.
 - * If you want to design a new model, describe the type of data or task that it should be suited for.
 - * If you want to write a review, describe how this review will reveal some new or important insights (e.g., by connecting distinct fields).
 - * If you want to develop a new benchmark, describe the capabilities you expect to measure and their implications for model development.
 - * If you want to propose dataset improvements, describe the quality aspects you aim to measure or enhance and their expected impact on model performance.
 - * If you want to conduct an empirical study, describe the specific hypotheses you will test and their implications for model training or deployment.
- **Work Plan (4 marks)** Plan your strategy for executing the project.

- Write a sequence of activities that could in principle get you to the finished product.
- Structure activities to test critical assumptions early. For example:
 - * For empirical projects: Run small-scale pilot experiments first
 - * For theoretical work: Prove simpler versions of your theorem
 - * For new methods: Test on toy problems before scaling up
- **Description of Proposed Results (4 marks)** Describe how you plan to demonstrate the ideas in your proposal.
 - Write a list of proposed experiments, figures, results, tables, or summaries. For each one, say what the reader could learn from it.
- **Related work (4 marks)** Explain how your proposal relates to the literature.
 - It's OK if you do not find all related papers, but do your best to find a few closely related papers.
 - For closely related papers, include 1-2 sentence summaries.

FAQ

How broad is the scope for the project? Can I do a project that overlaps with my thesis topic? It makes sense to pick a project topic that overlaps significantly with your interests, and we strongly encourage you to pick a project that may inform your thesis work. Still, the scope of the project needs to be related to the course content or to large AI model training more broadly.

Can I reuse work done prior to the course or work that was done in collaboration with people not on the project team? If your project involves any work that was already done prior to the course or was done by people not on the project team, then your project proposal and report *must* report the nature of this work. Our expectations will be higher compared with completely de novo projects.

Can I reuse a project from a different class? No.

Will your expectations change depending on the number of students in a team? We aren't modifying the marking scheme depending on the team size.

Academic Integrity

Because this assignment will involve citing other people's work, it is important that cite properly. In general, you should follow U of T's Code of Behaviour on Academic Matters.