

## 1 Introduction

You will be submitting a project proposal early in the semester. The goal is to make sure that you are on track to complete a good project by the end of the term.

It is often difficult to plan research. You cannot know ahead of time what you will discover, and research is all about discovery. It is fine if you end up changing your plans later on.

The proposal would likely be about 3-4 pages long.

I will sometimes provide a partial grading scheme to make it easier to understand the expectations. However, in a project-based class, there will be projects (and project timelines) for which the rubric does not fit well. Talk to me if there are concerns. Note that it is possible to earn fewer than 7 points for Problem 1 (for example) if one does not follow instructions or the write-up is flawed in significant ways, even though this case is not explicitly described in the grading scheme.

## 2 Problem Statement (10%)

What is the problem you are trying to address? What questions do you hope to answer? Why are those questions of interest?

*Grading*

- 10/10: A (reasonably) interesting problem. The questions are clear and relate well to the problem. The problem is well-motivated .
- 8/10: A clear problem is posed. The questions are related to the problem. The problem is motivated.
- 7/10: A problem is posed, and is motivated. The questions are articulated. The problems and questions could be articulated more clearly. The problem could be motivated better.

## 3 Data gathering plan (20%)

What data are you planning on using? Be as specific as possible. If you intend to collect a new dataset, outline a concrete plan for doing so. For example, point to websites that contain the data that you want to collate, and outline a plan to put the dataset together.

*Grading*

- 20/20: A clear and realistic plan is articulated, with specific pointers to resources when those are available.
- 17/20: A plan is there, but it is not clear that everything was thought through. (N.B.: graded while being mindful of the fact that people had not had a lot of time.)

## 4 Prior work (30%)

Summarize the results and methods of at least two papers that addressed problems that are similar to the one that you are trying to address.

*Grading* (for the best two summaries)

- 20/20: The paper is a good pick for the topic. The summary is clear and evinces understanding of the paper and its significance. The important and relevant points from the paper are pointed out in the summary.
- 17/20: The paper is a reasonable pick for the topic. The summary is reasonably clear and nothing crucial is missing.

## 5 More prior work (5%)

List at least two more relevant papers, and explain in a one or two of sentences how each is relevant to your project. (You can re-use papers from (3) if you summarized more than two). *Grading*

- 5/5: Followed instructions. The papers are relevant.

## 6 Technical methods (30%)

What are the technical methods that you anticipate using to address the problem? Mention at least two methods, and explain why they are appropriate. Your explanations should include references to existing published papers and/or textbooks and other authoritative resources. Note: it is perfectly fine to propose to use the methods you referenced in Part 3. In your write-up for Part 5, you should focus on explaining why the methods you chose are appropriate to your particular problem. You might argue from first principles, or you might argue for the similarity of your data and the data used in previous work.

*Grading* (for each method)

- 15/15: A clear (but likely concise) description of the method with appropriate references. Clear and convincing explanation of why the methods are appropriate.
- 13/15: Two appropriate methods are mentioned with appropriate references, and there is an explanation of the relevance, but the explanation is not completely clear

## 7 Anticipated results (5%)

Based on your reading of existing literature, what results would you anticipate for your project? Justify your prediction, referencing existing results. This question will be graded on the quality of the justification.