CS 236r Final Projects

Spring 2016

1   Project Guidelines

In this handout, we give you all the requirements for your course project, that will constitute 35% of your final grade. Your course project may be done individually or in pairs, but we strongly encourage working in pairs. Your course project will consist of the following components:

1. A 2-page Project Proposal **due March 7, 2016**

   In your project proposal, you should provide a high-level description of your project. What problem are you trying to solve? What results do you hope to get? Why is your problem important? How does your project relate to the papers we have been reading in class? Your goal should be to convince us that your ideas are well enough focused, and that you know what the first few steps will be. In addition to this, please make it clear to the teaching staff, what help you need from us (pointers to papers, access to data, etc.) if any. After we receive your project proposal, we'll set up a time to discuss your project with you.

2. A 2-page Project Update **due April 11, 2016**

   In your project update, you are to detail any and all progress you have made on your project since you turned in the project proposal. In addition to this, you should clearly state what additional results you hope to get. Have the goals of your project changed at all after obtaining some preliminary results? We are requiring you turn in an update so that you do not save all the work to the last minute.

3. A Short Project Presentation **on April 25, 2016**

   You are to prepare a short presentation of your course project. The project presentation will be in class on April 25, 2016. The hope is that you can get a sense of the spectrum of projects that your peers work on and receive feedback on your own project.

4. A Final Report **due May 2, 2016**

   Your project report is the most important part of your project. Your project report should read like a self contained research paper. What problem are you solving? Motivate your problem. What is the related work? What results did you obtain? What is your experimental methodology? (Of course, this question only pertains if you do an experimental project). What questions would you like to address in future work? Your project report, excluding Appendix, should not exceed 10 pages.

The project is something that you will spend a great deal of time on. We hope that you pick something that you like and something that you think you have intuition for. We give you some guidelines for picking your project:

1. Theoretical Project: Find a theoretical paper that we read or a theoretical paper related to the themes of this class. Are there too many assumptions made in the model? What happens when you try to relax one of the assumptions or alter the model a little? Where do the proof techniques in the paper break down for this new model? After understanding why the proof techniques in the paper do not hold for your model, you may be able to propose new methods for obtaining similar results.

2. Experimental or Computational Project: Most of papers we read this semester are theoretical papers. But you can totally choose to do a final project that's experimental or computational in nature. Find an experimental or computational paper related to the theme of this semester. (We are happy to provide pointers too.) Are there things that you wish the authors did?

As an alternative to the above, you can write an exposition paper reviewing literature on a topic. If you choose this option, it is not sufficient to simply take one paper and summarize it. We expect an in depth literature review. Your report should address: What is known so far? What are the open questions? What are the challenges in this area? In addition, at the end of a literature review, it is important to grasp what are some possible doable research questions that you could tackle. Your report should have some discussion about what you think the next step in this field is. *Literature review projects are considered individual projects.*

Remember to have fun with your project!