McMaster University CS 6WW3 Winter 2014 Course Project Getting Started

Objectives

The aim of the course project is for you to investigate in-depth, an advanced topic related to Web systems and Web computing that is not covered in the course. To identify such a topic, you will need to start with some preliminary readings in your area of interest. Your project will examine existing techniques, identify the strengths / weaknesses of these techniques, and how they compare with similar approaches. Based on the limitations, you will have the opportunity (and be expected) to propose new ideas on how some of these limitations can be addressed. This will involve explaining your idea, why is it a good idea, and how your proposed solution addresses the limitation. There are two potential types of projects that you may do:

- **Survey:** This involves reading several research papers, also known as *surveying*, a specific area, and summarizing, comparing, and contrasting the different approaches that tackle your topic. You will identify limitations of past approaches, and suggest techniques on how to improve or resolve these limitations. You must be able to justify your proposed idea or solution. This may involve arguments based on past work, or developing test cases that highlight the merit of your solutions.
- **Prototype:** If you are already interested in a specific web systems/computing problem, and would like to delve further, your project would involve coming up with a specific plan that includes a literature survey, possibly development of a prototype, development/refinement of algorithms, and a test plan.

For both types of projects, you should be able to convince the class why your topic or problem is important, what existing techniques are available, and why your proposed solution (to an identified limitation) is good.

Resources

Often the first step will involve reading relevant research papers or other publications to your topic or problem. Below are a few good resources to help you get started: (note you may have to be on the campus network to get full access to articles)

• ACM Digital Library: dl.acm.org

- IEEE Xplore: http://ieeexplore.ieee.org/Xplore/guesthome.jsp?reload=true
- Google Scholar: http://scholar.google.com/
- World Wide Web Conference: These are yearly conferences focused on topics related to the Web. You can search for "www conference < year >", where < year > is a given year's conference. For example, the link for WWW 2013 is: http://www2013.org

Paper Outline

Your paper should consist of the following sections:

- **Introduction:** Describe the problem or topic you're working on, why is it important, how is it relevant in today's web systems world? Provide a motivating example to highlight your points. You should also give an indication (briefly) of what your proposed idea or solution is.
- **Related Work:** Describe past approaches to this problem/topic. Compare and contrast the techniques, give their advantages/disadvantages, highlighting their similarities and differences. Most importantly, describe their limitations as this will serve as motivation for your solution.
- **Proposed Solution:** Provide an outline of your solution, and then describe in detail your proposed idea/solution. Give both the strengths and weaknesses of your solution.
- **Applications:** Describe application areas of your topic/problem. E.g., is it relevant for Web search?
- **Testing:** If given more time, how would you evaluate your proposed solution? What testing would you do? Provide a test plan of how someone would test your idea. If you are doing the prototype project, describe the testing you have done to evaluate your solution. Describe your test environment, the testing approach and plan, and the results.
- Conclusions: Give concluding remarks about what you have learned.

Grading

The project is worth 15% towards your final grade. You will be expected to submit a paper and do a presentation to the class at the end of term.