Project Description

Your project will form a significant portion of your grade for this class. It will likely involve 20–30 hours of work. In order to avoid any exam period rush, it is important to get started early and follow a timeline that includes steady progress toward project completion in December.

Projects can take several different forms. Every project will include a literature review, which requires collecting, reading and analyzing research papers from related areas. Some projects will include theoretical, algorithmic, implementation and/or computational aspects as well. Implementation projects need not be original, but can reproduce results from the literature. Alternatively, your "project" may consist of an expanded literature review and a *proposal* for original project work which you will not actually perform. Projects may be performed in teams of two, with a corresponding increase in their scope.

Projects may involve work in any area of formal verification, including those areas that we had time to cover in CPSC 513 or those that we did not. You may do work in formal verification itself, or you may apply formal verification techniques to an application or example. The key is that the project have some intellectual merit beyond what we study in class—you cannot simply apply an existing formal verification tool to a toy problem.

Your project may be combined with research in other fields; however, if you decide to combine the project with a larger research undertaking (such as your thesis work) it is important to identify at the start what work will be completed by the end of term and will form the CPSC 513 project.

There are three components to the project:

1. A proposal of 2–3 paragraphs describing your project idea. Email this paragraph to me by November 6. If the project will be an element of ongoing research, the proposal should explicitly identify what subset will be completed for CPSC 513. I will provide individual feedback on your project ideas in the following week.
2. An oral project presentation to the class of 10–15 minutes. Presentations will occur during the last week of November or first week of December.
3. A final written report of 7–10 pages. This must be delivered to me by Friday, December 19 at noon.

More details on the presentation and report will be announced in November.

Example projects include:

- Creating a formal model of a system and a property to be verified, and either using an existing tool to verify the property or discussing what changes would be required in existing tool(s) to perform the verification.
- For an existing model which has not been used in the formal verification community before, using an existing tool to verify properties of that model.
- Comparing several existing tools on some example problems.
- Investigating a tool or technique from formal verification that we did not have time to cover in class.

Visit the web sites of the ISD professors and/or talk to me if you would like some more ideas.