CSEP524: Final Project

Goals: The goals of the final project are as follows:

- To permit you to dig into some technology of interest in more detail than we would be able to as a class
- To expose the class to a broad set of technologies in a compressed period of time

Project Types: I view the project as taking one of two potential forms:

1. Reading/Exploration: Learn about some new technology via reading about it and/or exploring it (e.g., downloading a compiler for a novel parallel language); relate it to things we've been covering in class.

2. Programming Project: Propose some sort of parallel programming project that goes beyond what we've done in class.

As I've mentioned in class, I have a slight preference for the first project type because I think it's easier to contain the scope to something reasonable and also because I think it's easier to guarantee your success. Programming projects are more difficult to predict an appropriate size for and have the potential to go off the rails if you're not careful.

Scope: The effort required for the project should be equivalent to ~2 weeks of homework. If you're reading, expect to read 2-4 papers/tutorials. If programming, propose something equal to 2 weeks of homework assignments.

Selecting Project Topics:

- For reading projects, I'll provide a list of candidate topics on the course web page for you to consider. Feel free to propose an idea of your own as well.
- If you're not sure what to study, feel free to let me know your interests and we can brainstorm possible ideas.
- If you need help finding good starting materials for a given project (particularly one that I've suggested), let me know. In many cases (though not all), I'll have suggestions for the best resources to start with, or will know who to ask.
- I'd prefer for most projects slotted for each presentation night to be reasonably unique, so will be working to try and avoid duplicated efforts.

Deliverables:

1. *Report:* a short write-up summarizing your project (say, 3000-7500 words). For a reading/exploration project, this should summarize the technology that you've learned about in your own words and relate it to technologies we've discussed in class. As appropriate, you should express your opinions about what you think is good/bad about a given technology. For a programming

project, this should describe the approach you undertook, challenges faced and how you dealt with them, and the results you obtained (e.g., speedup or other forms of evaluation).

2. *Presentation:* a short in-class presentation summarizing your project. (5 minutes followed by a question or two from the audience). The goal of this presentation should be to convey what you've learned to your classmates (for their general interest and edification) and to Brandon & me (to demonstrate what you've learned and how it relates to topics we've discussed in class). Ideally, the presentation will be a distillation of your report. Five minutes isn't long, so focus on the core concepts that you want to convey rather than trying to explain everything you've learned (that's what the report is for). We'll need to be strict with time, so be sure and practice a few times to make sure your material fits in the time budget.

Requirements:

- You need to learn/do something new. For example, if you work on your company's parallel programming framework, reporting on that technology to the class isn't a viable project, it's simply advertising; by contrast, if you work for such a company but have never worked on their parallel framework, learning about it and reporting on it would be a reasonable project if that's of interest to you. Similarly, any programming project you take on should be an algorithm you've never written before and/or in a language you've never used before.
- The main feedback I've received from this class is that group projects don't work. That said, I'm open to having two people work/report/present together if that is more appealing to you--- correspondingly, the project/report/talk should be twice the scope/length.

Grading Criteria: Your grade will be based on content rather than form. In particular, I will not be basing grades on what a wonderful writer you are or how beautiful your slides are or how smooth your delivery is; rather, grades will be based on what you learned and how you related it to topics we've discussed in class. That said, your writing/talk needs to be clear enough that I'm able to evaluate the content.

Important Dates:

- **Feb 23rd:** Respond to the survey to request your preferred topic & date
- **Feb 26th:** Everyone's topic and presentation date should be locked in
- **March 12th/19th (in class):** Presentations are given
- **March 19th (before class):** Written reports are due (having them done earlier will be appreciated from a grading perspective—e.g., turning them in on the 12th would be ideal if that's your presentation night, but it's not strictly required).