Final Project review template

Project Reviewing: Group DEF Project and Presentation
Reviewer: Madeleine "Mac" Gagné

Notes:

- My responses to the final project review template are written in blue.
- As time constraints (to finish other final projects and exams) pressed me to need to be finished with my review by the end of the day on May 1st, I talked to group DEF after class to obtain a copy of their finalized report, allowing me to write up this review and submit it a bit early.

Project Summary

In your own words, describe what the project is about.

Project DEF studied the application of the concurrency process on identifying connected components. The group did this through use of parallel variants in the breadth first search algorithm using label propagation alongside. The group starts out by describing the parallel variance of breadth first search, providing a walk-through example of the process for readers and viewers. They focus on identifying how this process uses a frontier as opposed to a traditional queue to rank connected components through an iteratively repeating process. Following this, there is an example walkthrough of modified label propagation as it is serialized with other algorithms used to provide the modified label propagation. Then, they jump into describing their experimental design in studying the applications of concurrency. This details the different types of input graphs tested as well as their densities. The project then provides a report of the general overview or results. These results showed that the algorithm in question proved to have large costs of merging BFS components with more cost than benefit, leading the group to conclude they made a mistake somewhere along the implementation. Finally, a conclusion is provided summarizing all that was discussed.

Comment on how well the team addressed the categories in the Evaluation Criteria Document

Pedagogical value: As the presentation's examples and experimental design was very strong, I believe the project has robust pedagogical value. Their walk-throughs of the algorithms were very good for explaining to their audiences how everything worked.

Technical quality: Out of all evaluation criteria, I believe the group's technical quality was the strongest. Their descriptions of their algorithms were quite technical as were their experimental results and design. The details was quite strong and effective in provoking understanding.
Creativity: The group had a very strong personal style to adapting breadth-first search which I found to be very creative. I feel the report and presentation could have been a bit more creatively developed, but in total the intellectual components of the work are very creative.
Quality of presentation: The animations used in the walkthroughs of each algorithm were very strong. As were the experimental results. The content of the presentation was very strong but I feel it could have been more visually developed. Overall, the quality was very good.
Quality of report: The formatting and coverage of the report was very strong overall. I greatly appreciated viewing the commented pseudocodes provided as well as the diagrams to better understand the algorithm's implementation. Experimental results were much clearer in the final report than in the presentation with an adept future work section as well.

What did you like about the project?

list at least three things with a short paragraph about each

- I thought the group had very good graphs that accurately displayed their experimental results in a very readable way. Their approach to the experimental content was very creative and they approached their questions similar to how we would in class. As such, I saw the project as a strong depiction of the skill set we learned in 505.
- The level of rigor in the group's approach to their experimental process was strong. I could tell that they were very dedicated to the experiment's design and execution. The technical focus of the paper was very strong, so much so that I believe it stood out from other projects. It is my belief that their experiment was very rigorous and therefore quite appropriate for the final project.
- The animations of the presentation allowed for the procedures of the algorithms in question to be discussed quite well. They allowed for proper illustration of the methodologies and made them easier to comprehend. Visually, they were quite appealing as well too with proper color coding. The organization of the presentation was quite strong overall.
- I really liked the report's detail as well as its inclusion of a future work section. The paper stood out stronger than the presentation in my eyes and it held a lot of the technical abilities of the project conducted.

What could have been improved?

list at least two things with concrete suggestions in the form of a short paragraph or sublists

- I had a hard time figuring out if this was a survey paper or an experimental paper (i.e. which category the report fell into). Perhaps more inclusion of the paper's category in the title would be better suited to the project. Usage of key words or phrases from the project's description and rubric might have helped ground viewers and readers more as well.
- A lot of the titles and headings in the paper and presentation were quite wordy. Descriptions in the paper also proved to be quite wordy as well. Shortened content with more pruned prose would have improved this project. Succinct prose in describing experimental content is paramount- it demonstrates your ability to convey what you hopefully understand. I think the group understood what they are studying, but could have communicated it to readers and viewers better.
- I feel a greater number of graphs (as opposed to just three with varying density) could have been tested for strong results with wider application potential. This would have allowed for results to be more trusted (i.e. more trials of findings). Perhaps testing different variables pertaining to the algorithm's capabilities would have also been useful beyond just graph density. It could have been interesting to see how the results varied based of total number of nodes and/or edges as well.
- More use of visual aids in the presentation would have also been useful. This is beyond just the graphs that were provided for illustration. It might have been better to provide a background sections and slide refreshing readers on breadth-first search as well as a discussion of future experimental work and/or ongoing experimental work in the area in question (in the presentation- the future work section in the paper was quite good).

Questions for the team or for Dr. Stallmann

Did you have any questions for the team that you did not get a chance to ask? Do you have questions about technical details that Dr. Stallmann might be able to answer?

- What ways other than Galant could diagrams for testing be generated?
- If you had more time to strengthen your algorithmic methodology, what improvements would you make?

Other comments

- It was exciting to see a project that was more focused in on experimental content as opposed to summaries.

- Both the paper and the presentation did have a good balance of written/verbal background on the algorithms being discussed as well as the computational/quantitative components being investigated.