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Senior Project II — Fall 2017

Professor Jianting Zhang

Report for Sept. 12

Our project is going to be based on sub-graph isomorphism. Our plan is to take Twitter data and create recommended groups based on a shared interests. For example, if 2 people like the same 10 accounts, it would notify them and recommend that they follow each other, if they don't already. If more than 2 people like the same 10 accounts, it would notify them of the others that like them and suggest forming a "friend group."

We have at our disposal a graph that tracks people's "mentions," which refers to the act of one person mentioning another. This is done by prefacing the other person's name with an "at" sign (@). Our plan is to track multiple people mentioning the same few accounts. From this, we can create a subgraph and compare it to the entire graph of mentions to see how many times our subgraph appears. For example, if person A mentions accounts 1 through 10, we have to find other people who like the same 10 accounts. If only one person, B, likes the same 10 accounts, then it recommends to A to follow B, and vice versa. If multiple people, B, C, and D, like the same things as A, and they do not currently follow each other, recommend a friend group/social circle.

The project's progress should proceed as follows. Each week will be accompanied with a report detailing the actual progress.

- September 12th — This report, along with the data set that will be used to test our solution, both for correctness and for performance benchmarks.
- September 19th — Report on plans to implement our solution, as well as progress on development of the solution itself.
- September 26th — Completion of program to match nodes in one graph to corresponding nodes in larger graph.
- October 3rd — Addition of ability to match nodes in one graph to corresponding edges in larger graph, after finding corresponding nodes.
- October 10th — Verification that solution works on data set provided, begin planning GPU implementation.
- October 17th — Begin work on GPU implementation, with focus on optimizing speed of mapping nodes from one graph to another.

- October 24th — Continue working on GPU implementation, shifting focus to comparing connections between nodes and checking for isomorphism.
- October 31st — Report on bugs identified and plans to fix them.
- November 7th — Completion of GPU implementation.
- November 14th — Designing of GUI/front end.
- November 21st — Continuing work on front end.
- November 28th — Connection of front end to back end.
- December 5th — Completion of project, final testing.
- December 12th — Completion of final report.