CSCI 39575 Project 2: Research Assay

Prompt:

Pick any topic that we studied in this course or in general graph theory, study 2-3 papers on it and distill the ideas present there into a cohesive paper explaining the topic.

The main idea here is to be able to pick a topic, find interesting research about it and try to explain it in your own words. This is a very important skill to learn and is often a very useful one throughout life. The goal isn’t to write your own research paper, (although that would be incredible!) rather you should learn how to simplify complex ideas.

Some topics that might be interesting:

Search engines, tours in graph theory (like the knight’s tour, there are many good YouTube videos on it), shortest paths, stable marriage, school choice, Braess’s Paradox, infinite graphs, hypergraphs (graphs with edges that connect more than two vertices), coloring problems and a plethora of other options.

You are allowed to work in a group, but the more members you have, the more is expected from this project.

Rubric:

Ideally, they project should be 4-9 pages depending on how carried away you get. The page count won’t factor into your grade, some people do very well with [concise papers](https://www.google.com/search?q=conway%27s+shortest+paper&sa=X&sxsrf=ALeKk006R1Z5REwJrNWeTMkbegklCceQAA:1617677425667&tbm=isch&source=iu&ictx=1&fir=F93zpXGiY0L3mM%252CtCqIJ9GdbruCKM%252C_&vet=1&usg=AI4_-kR7asC1IRzlJmiTDKeDhJfKNb076A&ved=2ahUKEwj88MSCzujvAhXlmq0KHXCwCdAQ9QF6BAgLEAE&biw=2327&bih=1180#imgrc=F93zpXGiY0L3mM), but it is what is expected. Please include a bibliography in a style you prefer (like APA. MLA, Chicago, or any other format you like) and make sure that any references or citations you use follows that style. The paper is worth 20 points and will be graded like so:

**Introduction** (4 points): is the topic presented in an interesting and informed manner? What are you studying and why is it interesting?

**Limitations** (2 points): what are the limits of this work? Does it only apply to specific circumstances? What are you attempting to cover in your analysis?

**Literature review** (3 points): briefly explain what the goals of each of the main papers you’re referencing are. Do not copy the abstract verbatim.

**Main body of the paper** (4 points): Go into depth about your topic, what the papers you chose taught you about the topic, what you learned about any problems in the topic and what solutions are available.

**Conclusion** (4 points): What did you learn from this whole experience? Bring everything you did so far together into one or two cohesive paragraphs (essentially sum up the whole project here).

**Bibliography and citations** (2 points): one point for a correct bibliography and one point for using citations (correctly).

**(1 point)**: What if anything, did the project teach you? Do you have any suggestions to improve this project and what issues did you face? Did you enjoy this project?