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**Goals for the summer**

This summer I’m hoping to continue analyzing the performance of the network heuristic and the assignment. My goal is by the end of the summer I will have enough material written up to submit a paper. There are four main components to the paper that I need to work on:

* **Further performance analysis of the network heuristic:**  I plan to look into the performance and variability for different arc length functions, and analyze the performance for different inputs and problem sizes. At some point (may or may not be part of the paper), I’d be interested in implementing a rolling horizon approach to see how many requests are filled by the end of day. I don’t currently have any ideas for theoretical performance bounds but I’d see if there’s any simple lower bounds.
* **Further performance of the assignment heuristic:** We need a more thorough performance test that compares the performance ranking of menus using the heuristic versus ranking using the optimal assignment. I will also investigate what theoretical performance bounds there are for different c, d, and r values. There will be certain cases when the heuristic finds the optimal assignment so we can identify these cases. I should also look into set covering algorithms to see if it can help either prove performance bounds or design an algorithm.
* **Literature Review:** I’ve done a bit here and there for projects, but not at the level that’s sufficient for a paper. Though between the papers I’ve looked at so far (some more thoroughly than others) and the goodly handful of papers you’ve sent me I have a pretty good list to work with
* **Basing Inputs off of real data:** I don’t know if this will be a part of the first paper, but as discussed, the goal is to eventually use data from real life to influence the inputs. One possibility will be superimposing origins and destinations on a city map and calculating the acceptance probabilities based on the driver’s distance/extra driving time. If possible the supply and/or demand origins and destinations could be from a dataset.