

CS292F - Final Project Proposal
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For my final project, I would like to use the BTER, the Clustered Random Graph Generator, and the Mocnik generator on the SuiteSparse Matrix collection to try to replicate members of a given graph group, as well as evaluate how close each replication is to the given graph via the eigenvalue spectrum, degree frequency, and coefficients. Ideally, this comparison could show each generator's performance in different groups and hope to find differences in performance depending on the type of graph being processed.

The SuiteSparse Matrix collection has obviously a massive amount of matrices stored within it, so I'd like to select my groups to be very different, and members of the group to vary in size greatly. The python package NetworkIt contains models for the three different generators. I'd estimate on evaluating between 5-8 groups of graphs, each with 5-10 graphs within a given group.

The final project will consist of a theory section highlighting the differences between the three generators, a brief overview and list of the graphs used and their respective category, and finally a results section giving examples of graph generation performance and numeric comparisons of the methods.