ME759 Final Project Proposal

Project Title: A study of Generalized Minimal Residual Method parallelization

Link to git repo for project: https://github.com/tlfua/ME759_final_project.git
Problem statement: Optimize and accelerate a classic linear solver by taking advantage of the parallel computing frameworks I have learned in this class.

Motivation/Rationale: Solving linear system is important for many scientific applications. With this project, I hope to provide parallel versions of a linear solver to benefit scientific development.

Explain how you contemplate going about it: I will first implement a sequential version (as a baseline) of the linear solver- Generalized Minimal Residual Method, and then investigate how I can utilize thrust/OpenMP to accelerate them.

ME759 aspects the proposed work draws on:
1. thrust
2. OpenMP

Team member[s]:
- Name: Tien-Lung Fu
- Email: tfu37@wisc.edu
- Student's role in project: Focus on GMRES implementation for sequential and parallel.

Deliverables: source codes, input files, user guild, experiment report.

How you will demonstrate what you accomplished: I will demonstrate the improvement from baseline to parallel version as well as the scatter plot.

Milestone: baseline and thrust implementations of GMRES.

Remarks:
- Please use *this* template
- There's a two-page limit. See if you can make your point without hitting the limit.
- Drop your PDF proposal in Canvas in `FinalProjectProposal`
- Project proposal due date: March 27 at 9 pm. I hope to give feedback by April 3.
- Be bold.