Final projects
ME 471/571

Instead of a final, you will have an option to do a final project. You have a lot of flexibilty in deciding what you'd like to do for this project.

- Developing a parallel (distributed) version of a serial algorithm BiCGStab. This is an extension of Conjugate Gradient algorithm that works for general matrices and so does not have the restriction that the matrix be symmetric positive definite. Verify that it works by solving a matrix problems using a matrix A with random entries. and provide scaling results.

- Develop a GPU implementation of the BiCGStab algorithm.

- Investigate "communication avoiding" iterative solvers that reduce the impact of the dot products in the parallel setting.

- Develop a parallel wave equation solver in a layered media or a medium with obstacles.

- Choose an subproject from current research you are working on.