

AM 260 - Computational Fluid Dynamics: Homework

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Problem 3:

After watching Prof. Roe's talk some of the problems in CFD that seem the most interesting to me is how to choose a grid of triangles to fill a volume/area. I remember the professor saying that there is a way to algorithmically determine a discretization of triangles to fill a volume, but doing so with the most regular triangles is a difficult question. This seemed to be an interesting optimization problem in which the a grid with the most regular triangles can be determined. Besides that, I am eager to find out how to write finite volume and finite element methods for CFD as it is one of the essential numerical methods that I still haven't learned.

Problem 4:

I will be doing the assignments for this course in Fortran as it is the language I do most of my research based work in Fortran. I will often use python for visualization alongside Fortran. My course experience with Fortran consists of AM 250 and AM 213 (A& B), and my research experience consists of contributing to a parallelized pseudospectral code written in Fortran. I have also written several data extraction routines in fortran. I would say I'm moderately to highly skilled in Fortran.