

MATH299M/CMSC389W

Spring 2019 – Ajeet Gary, Devan Tamot, Vlad Dobrin

Model H13: Precomputation – Making a Movie

Assigned: Friday April 12th

Due: Sunday May 12th, 11:59PM

Note: Remember that out of the H models from Part 3, that is, anything numbered 10 or above, you must only complete 2 assignments. Any extra you complete can replace low scores from Part 1 and Part 2 of the course.

This week we learned the art of precomputation – how to cleverly prepare presentations to be smoother than they would be in real time by computing parts of it ahead of time.

Your mission in this assignment is to make a smooth movie through Precomputation. Your movie can be of anything you want! It could be rotating a complicated surface, manipulating through options for a heavy computation, recoloring an image, etc. The only requirements are that you use our techniques of Precomputation, meaning you should be Exporting a ton of individual pieces, so either .mx files with GraphicsComplex objects etc. or actual images like .bmp's, then Importing them all back in to an array, and finally Manipulating over that array for a smooth animation!

Keep in mind that your computer has limited RAM, meaning that when you load in Precomputed files you'll slow your computer down if you load in too much. Furthermore, when exporting if you set the ImageResolution and/or PlotPoints too high it may take an extremely long time to generate the output files, in which case you should abort so you don't make your computer angry.

Keep in mind that precomputation doesn't have to be only on Graphics and Plots, that is, you can Export and Import anything you want! And don't be afraid to get your hands dirty with how you precompute things – it doesn't matter how convoluted or extreme your calculations behind the scenes are, as long as the results load quickly into the model.