MAE 259B: Mechanics of slender structures and soft robots

Homework 2, Spring 2022

Due: 05/05/2022 03:50 PM

[Optional] Chapter 6 *Discrete Twist* of course notes includes three short assignments. You do not need to include your code for this part.

[Required] Chapter 7 *Discrete Elastic Rods Algorithm* of course notes includes one assignment on simulation of an elastic rod.

Your submission on BruinLearn should only contain the URL to your GitHub repository. Your GitHub* repository should include the following items:

1. A report in .pdf format (file name should be Homework2.pdf) addressing the questions asked in the deliverables. See the syllabus for formatting requirements.

2. Source code. The submission should have one file named *exactly* as Main.[ext] that implements the 3D simulation; replace [ext] with the appropriate extension based on the programming language** of your choice. You may use as many helper functions/files as needed; however, execution of Main.[ext] should right away run the simulation. You should also include a README file containing instructions on how to run your code.

* You should create a GitHub repository for this class and share it with the instructor (khalidjm@seas.ucla.edu). All the homeworks, reports, presentations, and proposal should be uploaded to this repository.

** In the two homeworks for this class, we are essentially rapid-prototyping a software that would be useful for the final project. In this prototyping phase, you can use MATLAB, GNU Octave, Python, etc. However, it is highly recommended that you use C/C++, FORTRAN, Java, etc. for the final project to develop computationally efficient codes.