Physics 441/541 Final Project Rubric

(Total of 40 points)

Level 1: Score out of 15 points

1. You have a simulation of your own design that runs (5 points), within a Jupyter Notebook.
2. You have provided documentation (in a Jupyter Notebook) that describes what the simulation does and how it does it. Mention specifically the principles of physics and/or computer science and/or data science that are the basis for the simulation.
   1. Clear and complete: 8-10 points
   2. Lacking in clarity, OR incomplete: 4-7 points
   3. Lacking in clarity, AND incomplete: 0-3 points

Level 2: Score out of 25 points

1. Originality: Is this simulation out there on the web already, or is this something that we have not seen before?
   1. Very original: 4-5 points
   2. Somewhat original: 2-3 points
   3. Not very original: 0-1 point
2. Interactivity: Does the simulation encourage/enable the user to interact with it in a productive way, for example, by allowing to adjust input parameter values and/or input data?
   1. Highly interactive: 4-5 points
   2. Somewhat interactive: 2-3 points
   3. Not interactive: 0-1 point
3. Multiple Representations: Does the simulation Include more than one way to get the information across. For instance, the simulation could include a real-world visualization, and/or have graphs in multiple formats.
   1. Three or more representations: 4-5 points
   2. Two representations: 2-3 points
   3. Only one representation: 0-1 point
4. Degree of Difficulty: based on the difficulty level of creating the simulation.
   1. Impressive and challenging: 4-5 points
   2. Somewhat challenging: 2-3 points
   3. Relatively simple: 0-1 point
5. Programming skill: How was the program implemented? Was the simulation developed in the clearest/simplest/most efficient way, or was it unnecessarily complicated?
   1. Elegantly written and computationally efficient: 4-5 points
   2. A little more complicated than necessary with some inefficiencies: 2-3 points
   3. Much more complicated than necessary and inefficient: 0-1 point