For my final project for Computer Graphics, I'll work individually to simulate the movement of straight hairs as wind moves through them. I'm thinking of simulating these hairs as Bezier curves and treating the wind forces as a vector field (perhaps this can be manipulated and adjusted by the user themselves) and applying them to the hairs, similar to the cloth simulation pset we completed. The final product will have individual hairs (the curvatures of which the user can edit themselves with their mouse) affected by gravity and moving due to the wind (the intensity and direction of which the user can also manipulate).

To implement this, I'm thinking of storing some kind of delay value to represent the speed the hair will return to its initial state. I am thinking of taking inspiration from the cloth / physics simulation pset of adding up the forces (such as gravitational force) applied to these hairs, and also taking inspiration from previous work we have done with bezier curves.

At first glance of the literature, this paper from Petrovic, Henne, & Anderson from Pixar on the volumetric methods for simulation and rendering of hair seems useful. This writeup of hair simulation with OpenGL also seems useful.