

April James
jamesap@oregonstate.edu

Project #6: Catmull-Rom Jellyfish

The sixth CS450 graphics assignment is all about Geometric Modeling. The objectives included:

- Learning about geometric modeling styles in OpenGL
- Learning about curve sculpting techniques using Bezier curves and Catmull-Rom Curves
- Utilizing the Catmull-Rom Spline equation to model curves in OpenGL
- Animate sculpted curves

For this project, I created a singular CR curve by reading from a 2D array into an array of Point structs. To animate the curve, I ran the points through a function that translated the coordinates based on a factor of Time, then graphed the altered locations. The curve was duplicated and redrawn multiple times to create a 3D object using the `glRotatef()` function, and the color gradient was created by adjusting the RGB values based on changing X and Y coordinate positions and a factor of time.

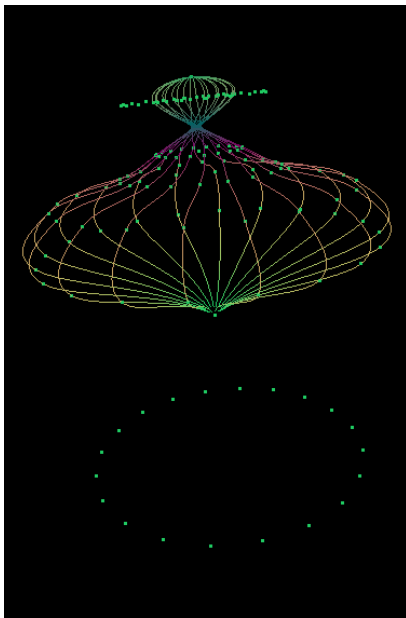


Figure 1: Curves in Action!

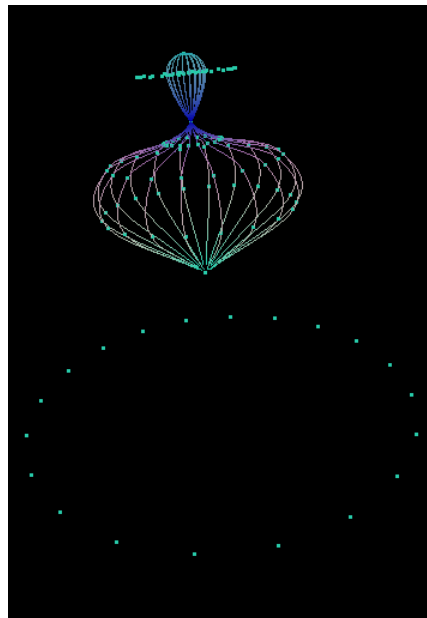


Figure 2: Frozen State

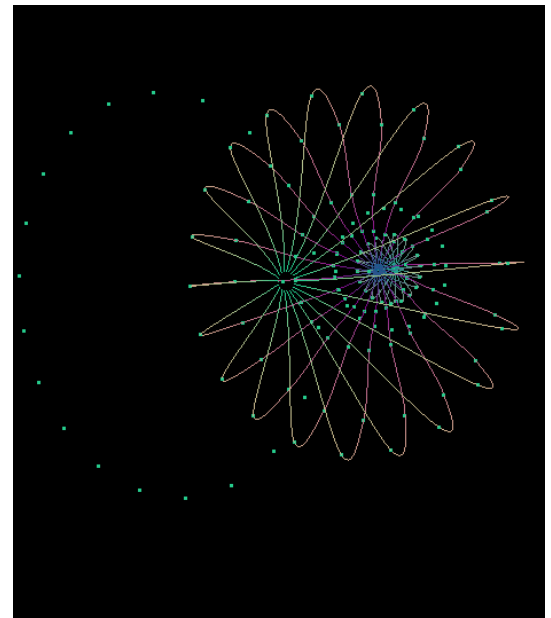


Figure 3: A cool angle!

Here is a link to the project video: <https://youtu.be/BoQAkYR45EQ>

Thank you!