

Blog Entry © Monday, November 10, 2025, by James Pate Williams, Jr. More COMP 640
Advanced Computer Graphics Results

In the Spring Quarter of 1999 at Auburn University, I took a course named COMP 640 Advanced Computer Graphics taught by Professor Kai H. Chang. We had to create a class project of the students' own design and implementation. I modified the project to do three-dimensional graphics in about 2011. The program was written using OpenGL, the open graphics library. Below are some graphs generated by the application.

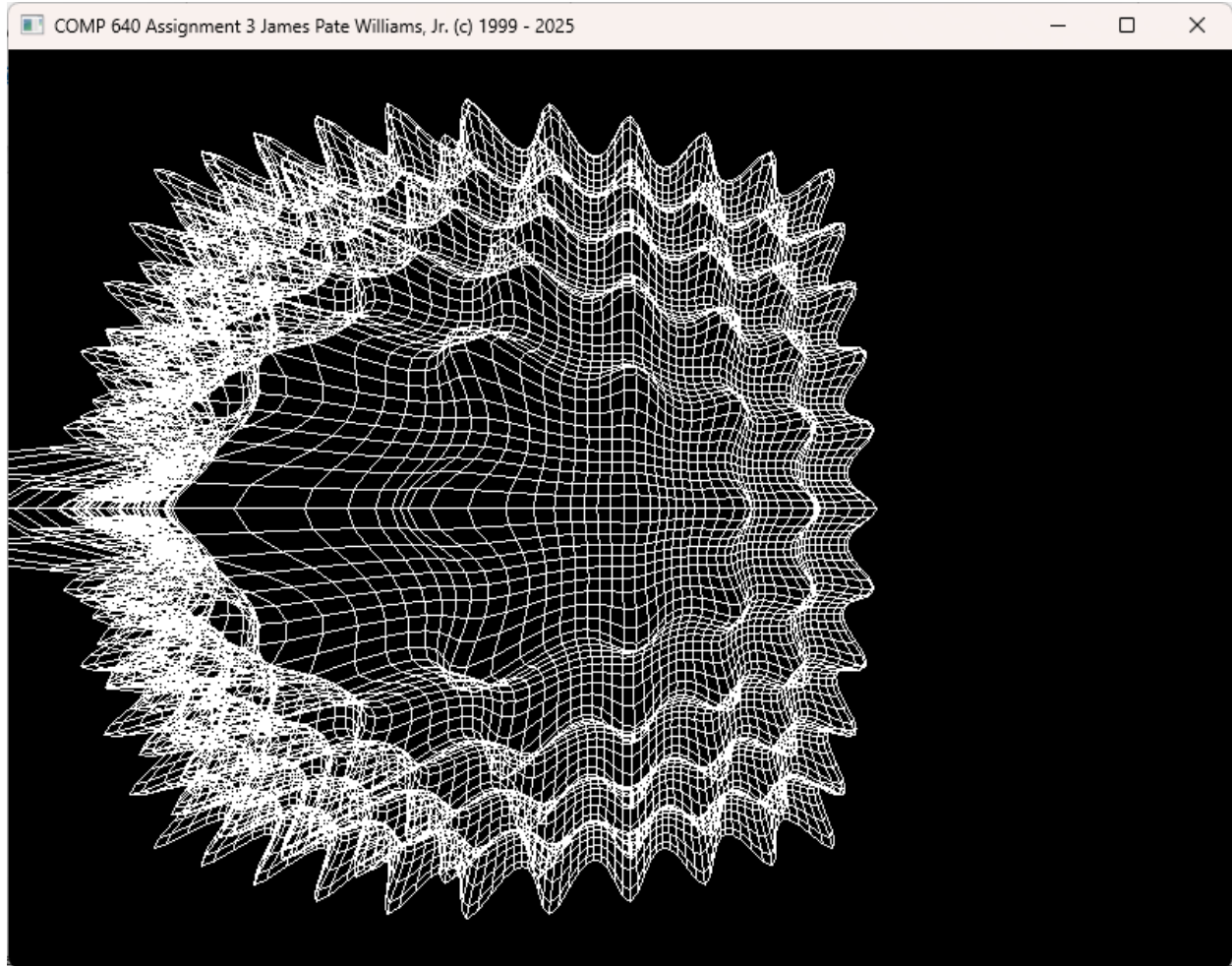


Figure 1 Ackley's Function

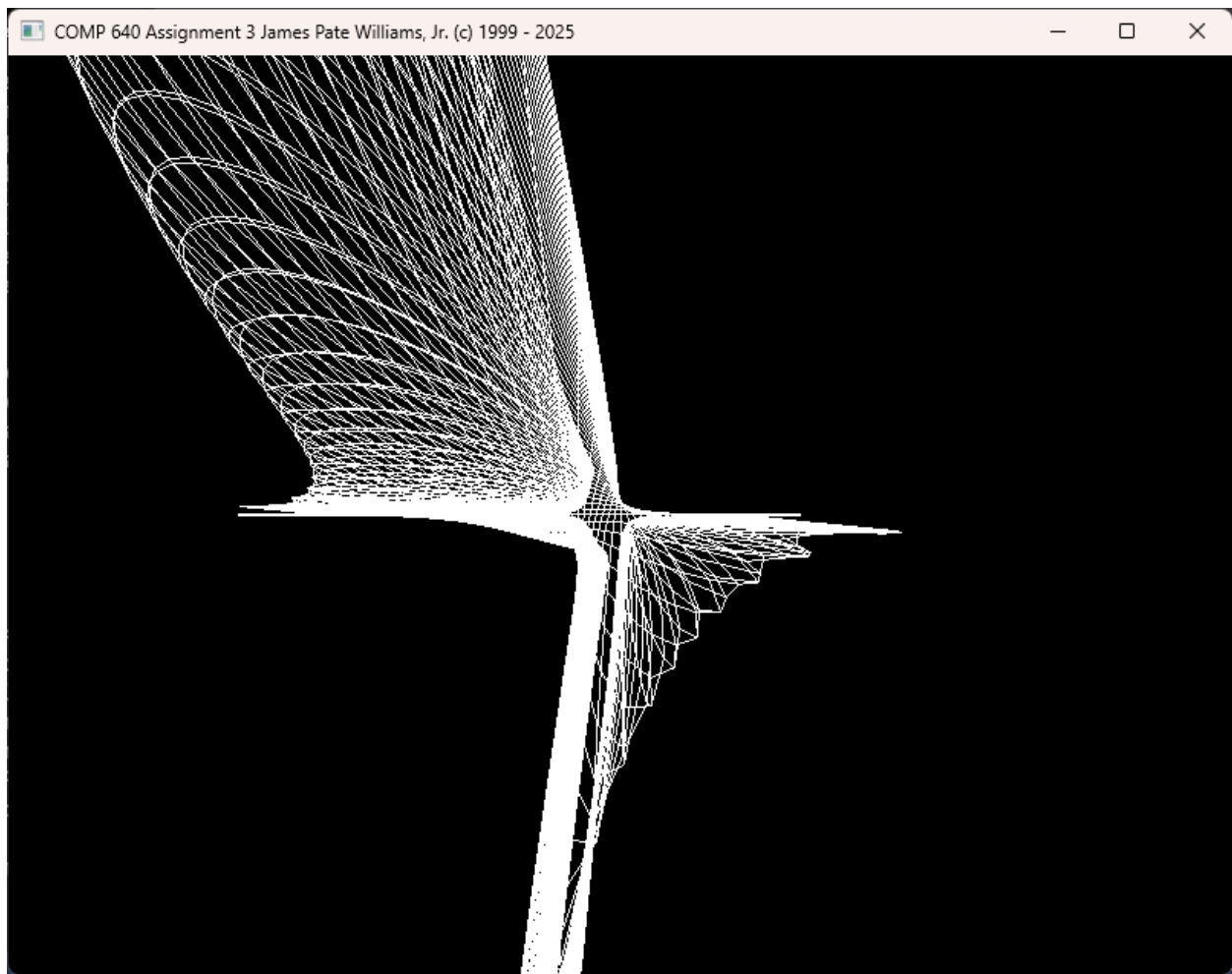


Figure 2 - Beale's Function

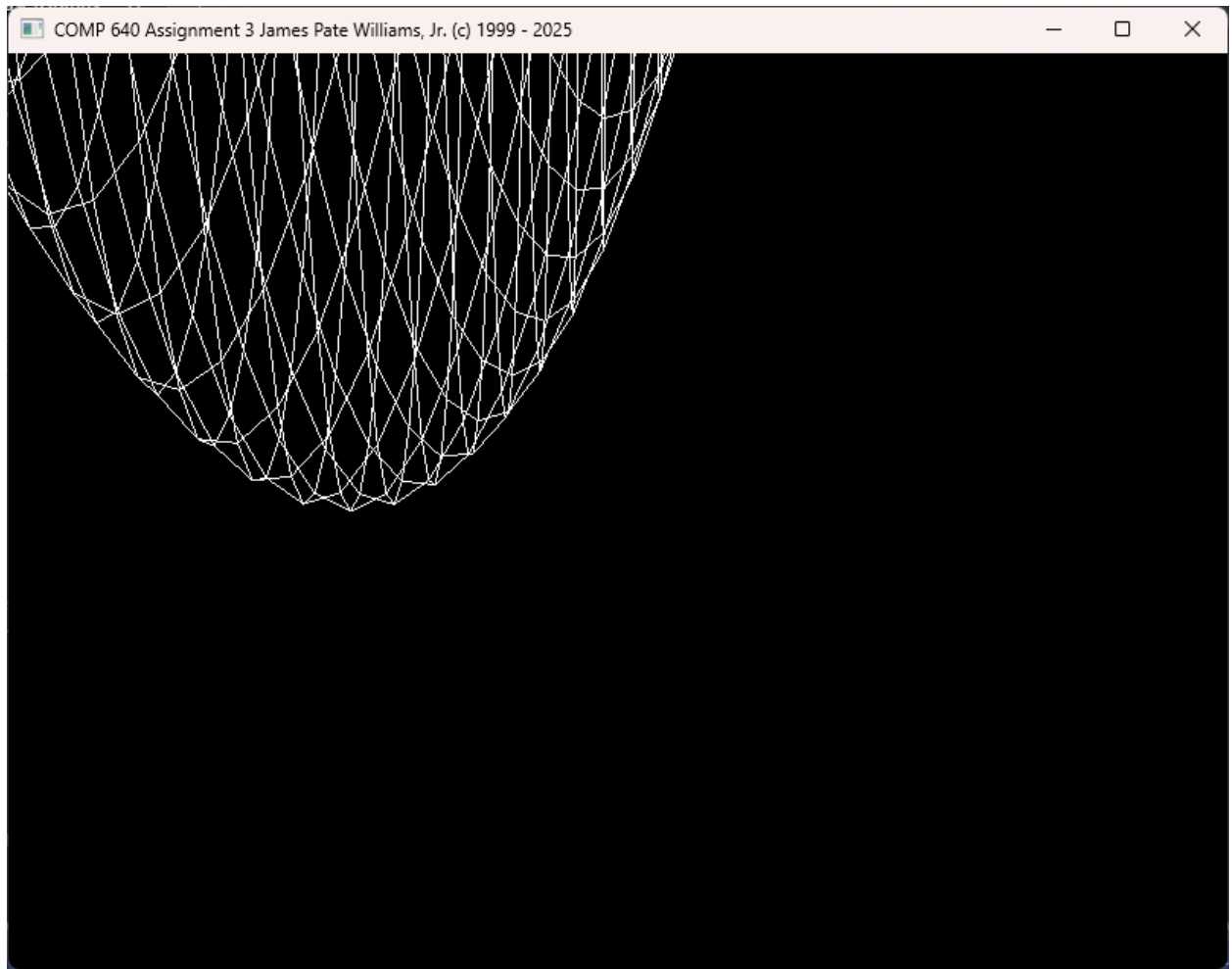


Figure 3 - Booth's Function

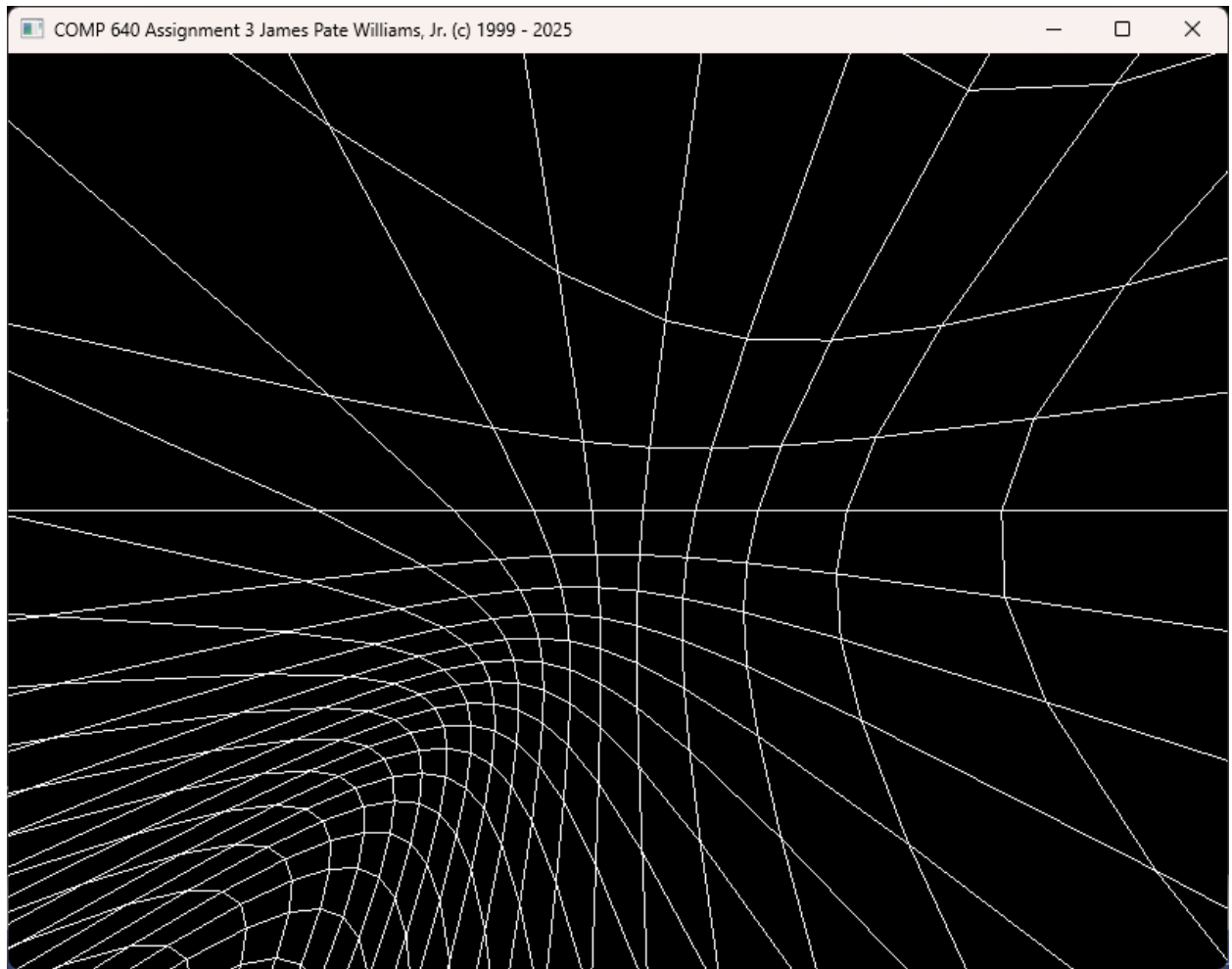


Figure 4 - Booth's Function

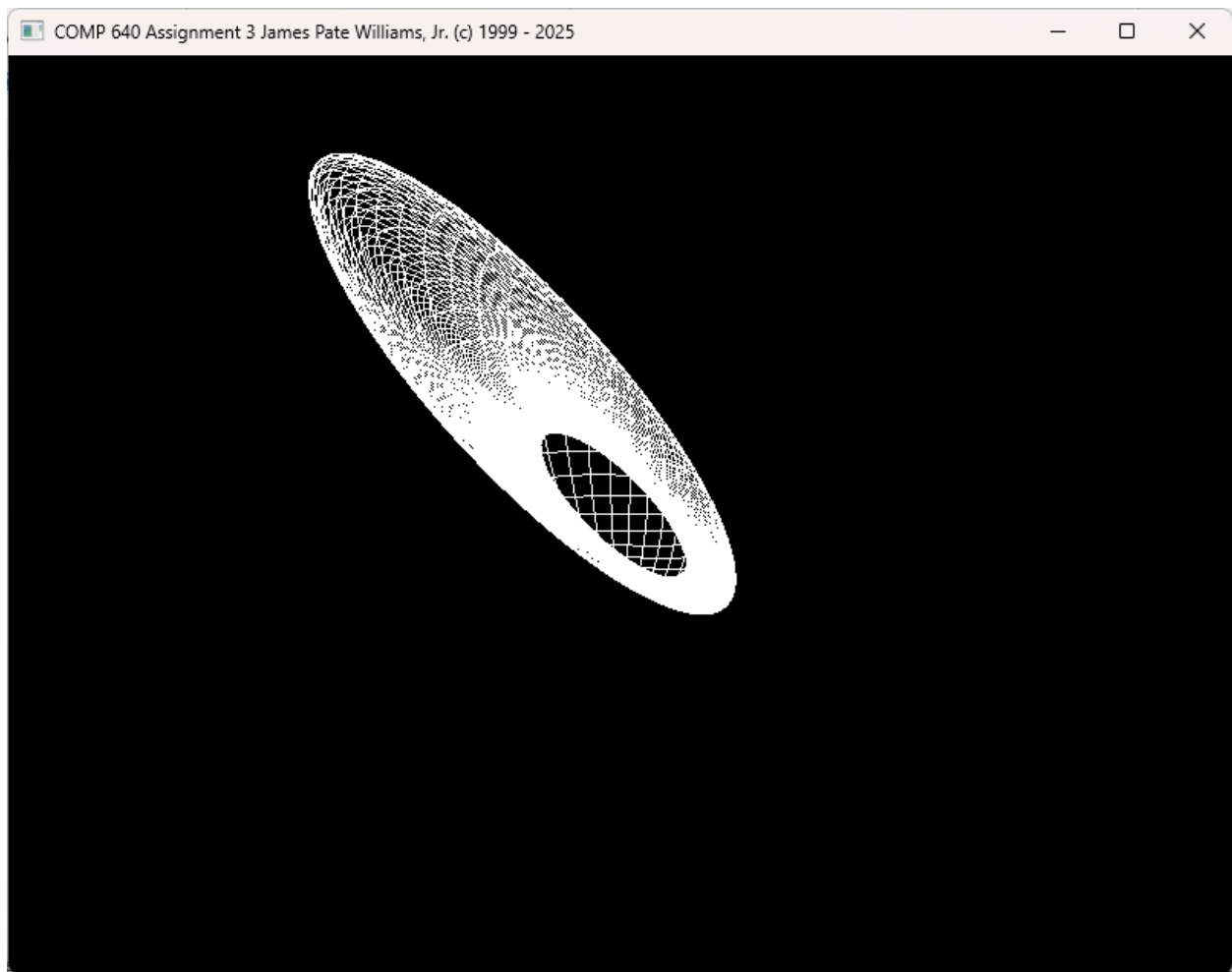


Figure 5 - Booth's Function

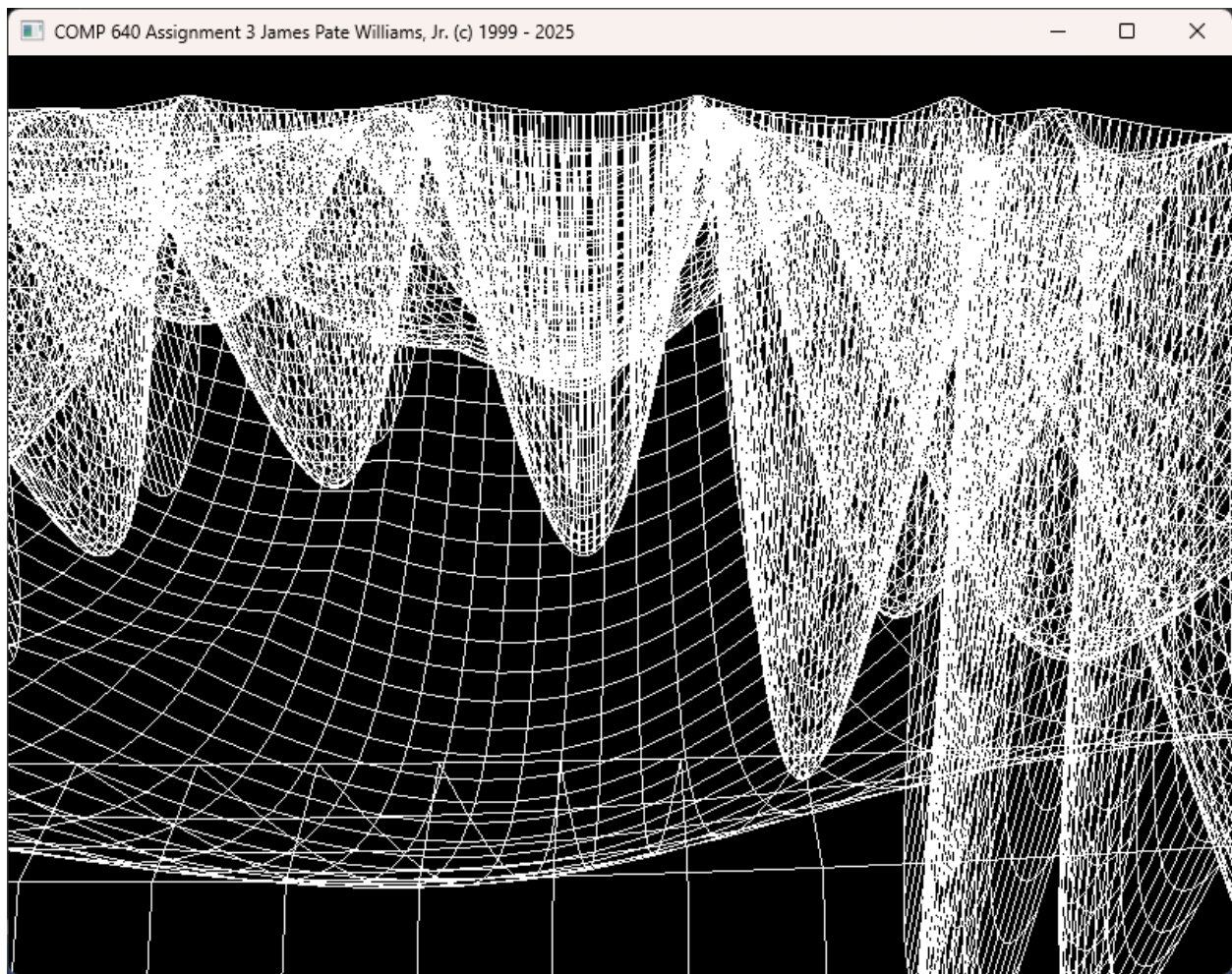


Figure 6 - Holder's Table Function

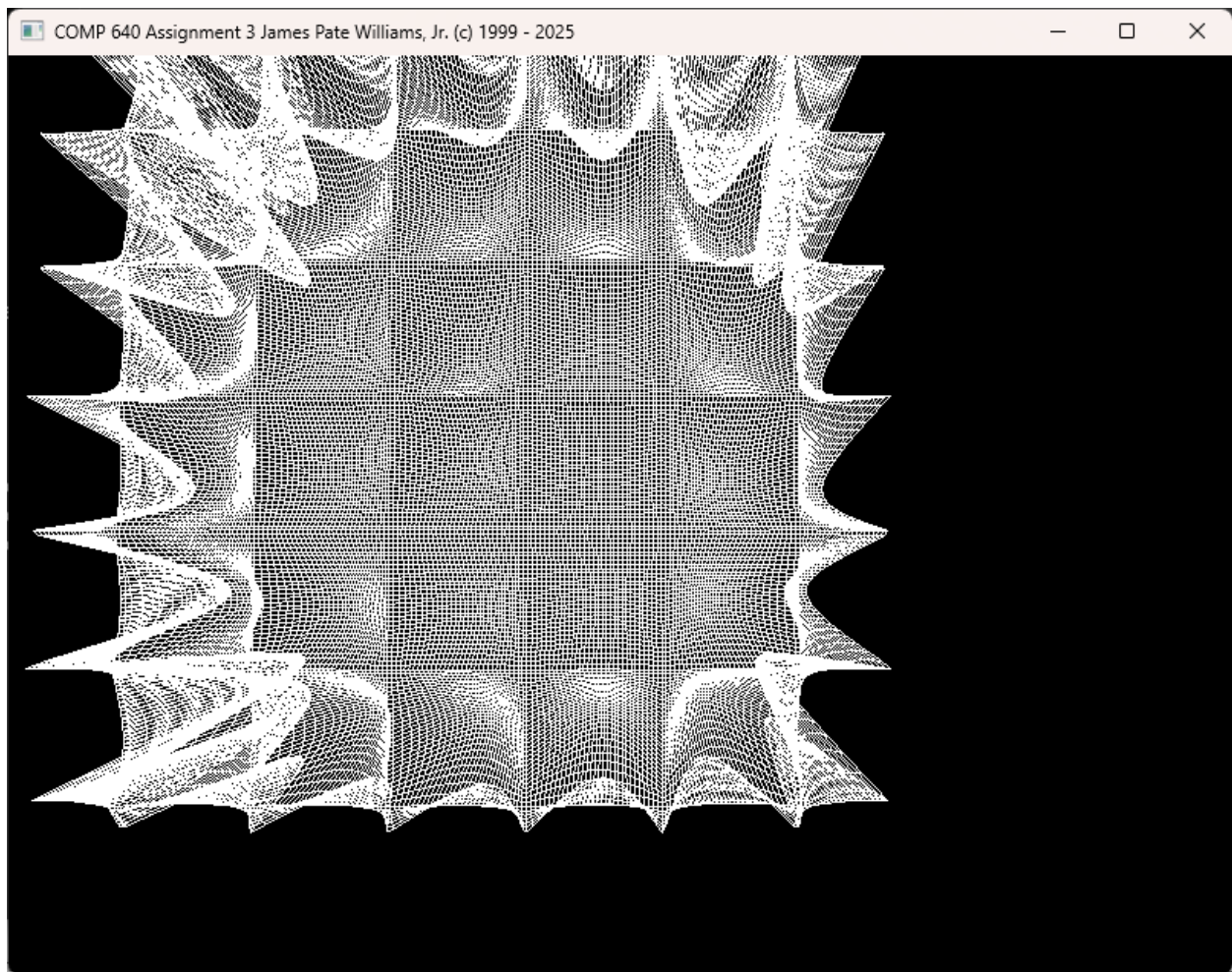


Figure 7 - Holder's Table Function

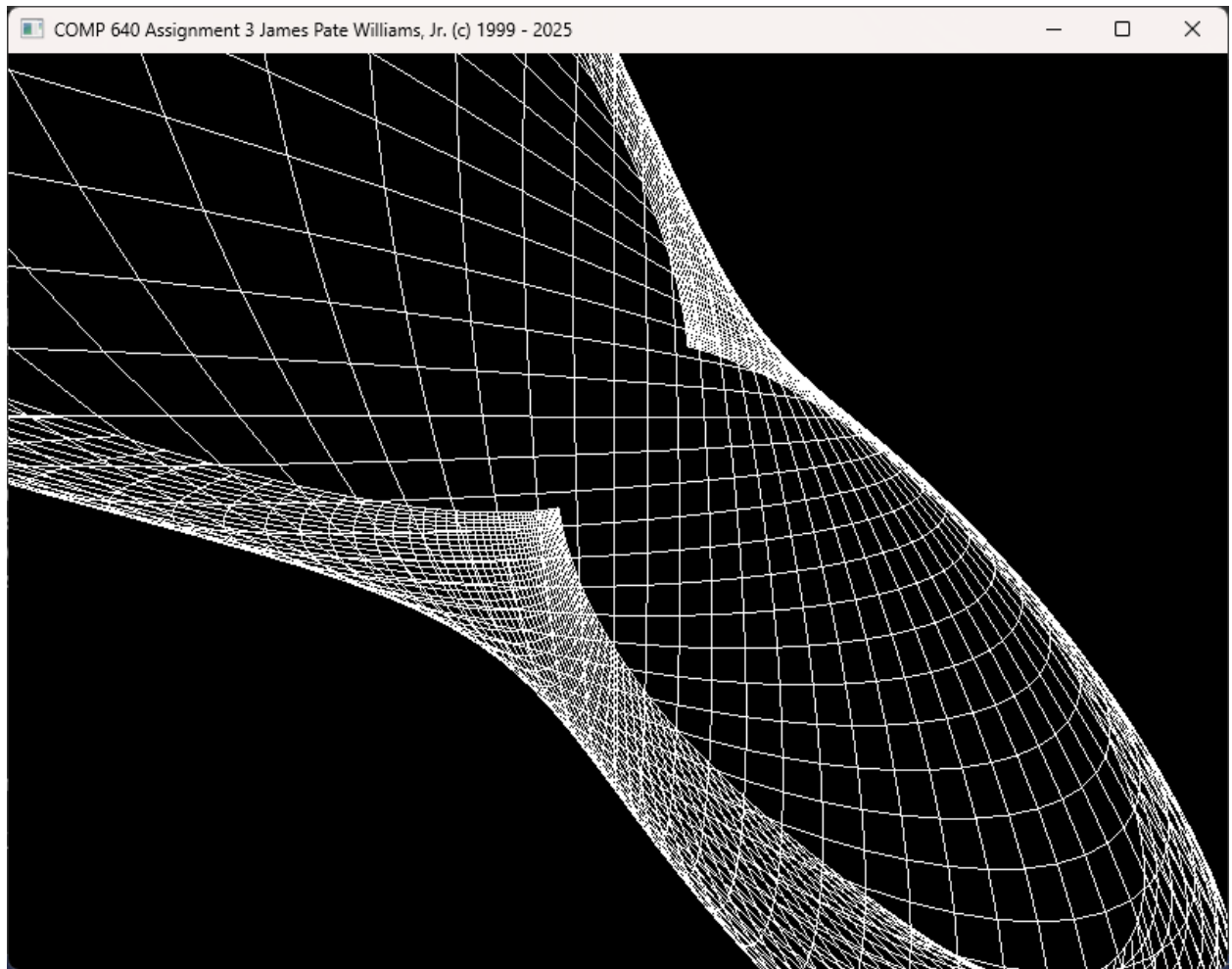


Figure 8 - McCormick's Function

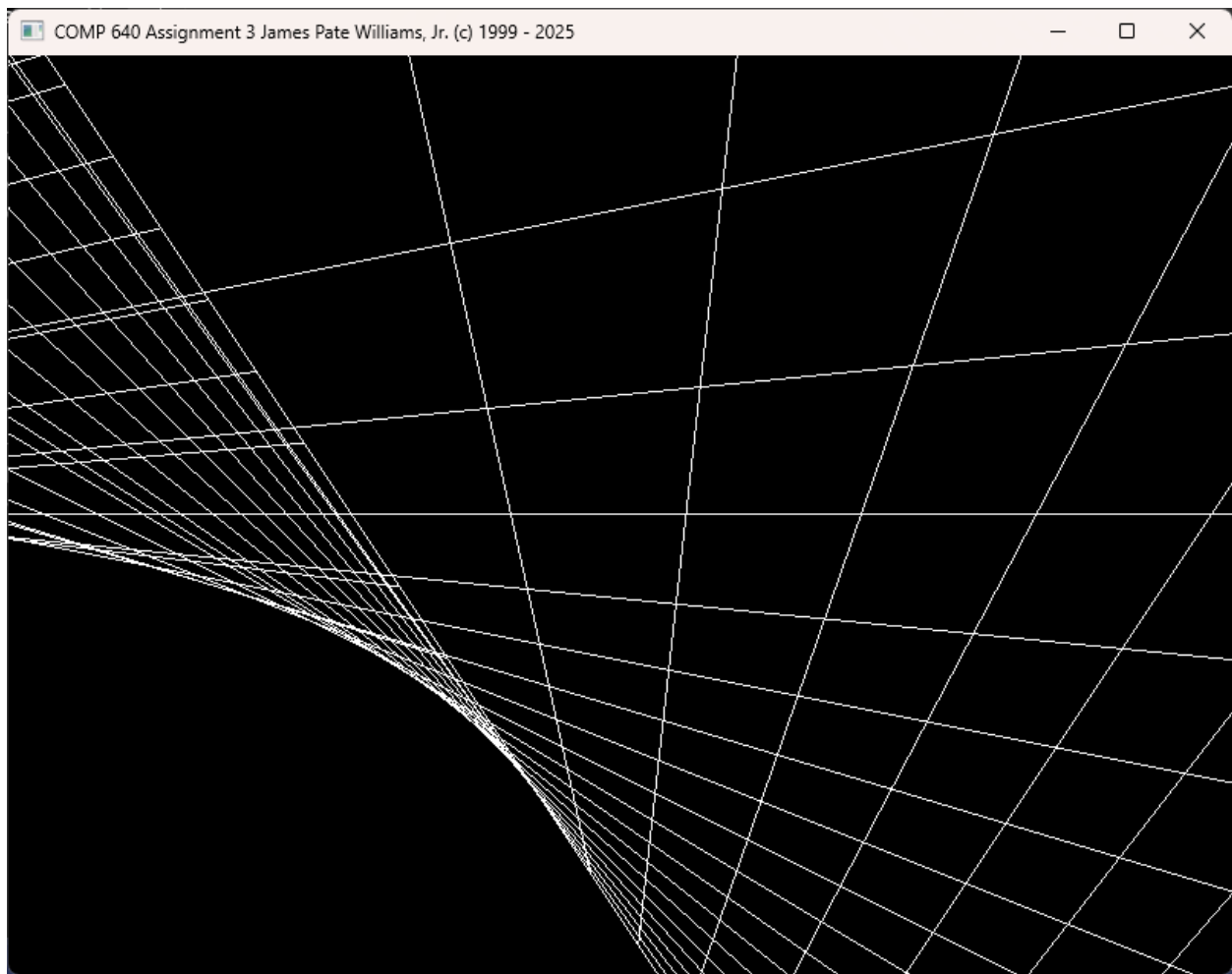


Figure 9 - Real Spherical Harmonic $Y(2, -2)$

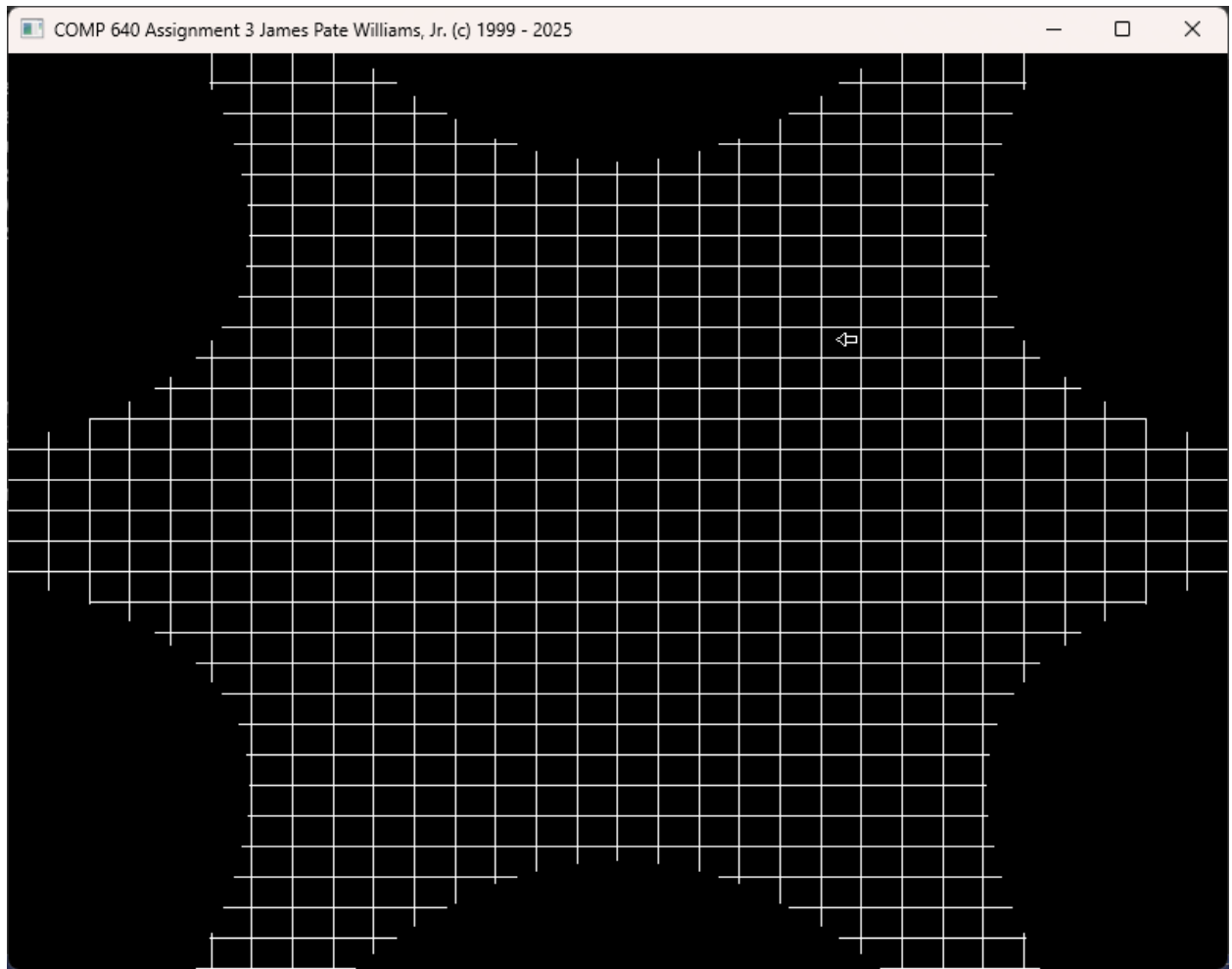


Figure 10 - Real Spherical Harmonic $Y(3, -3)$

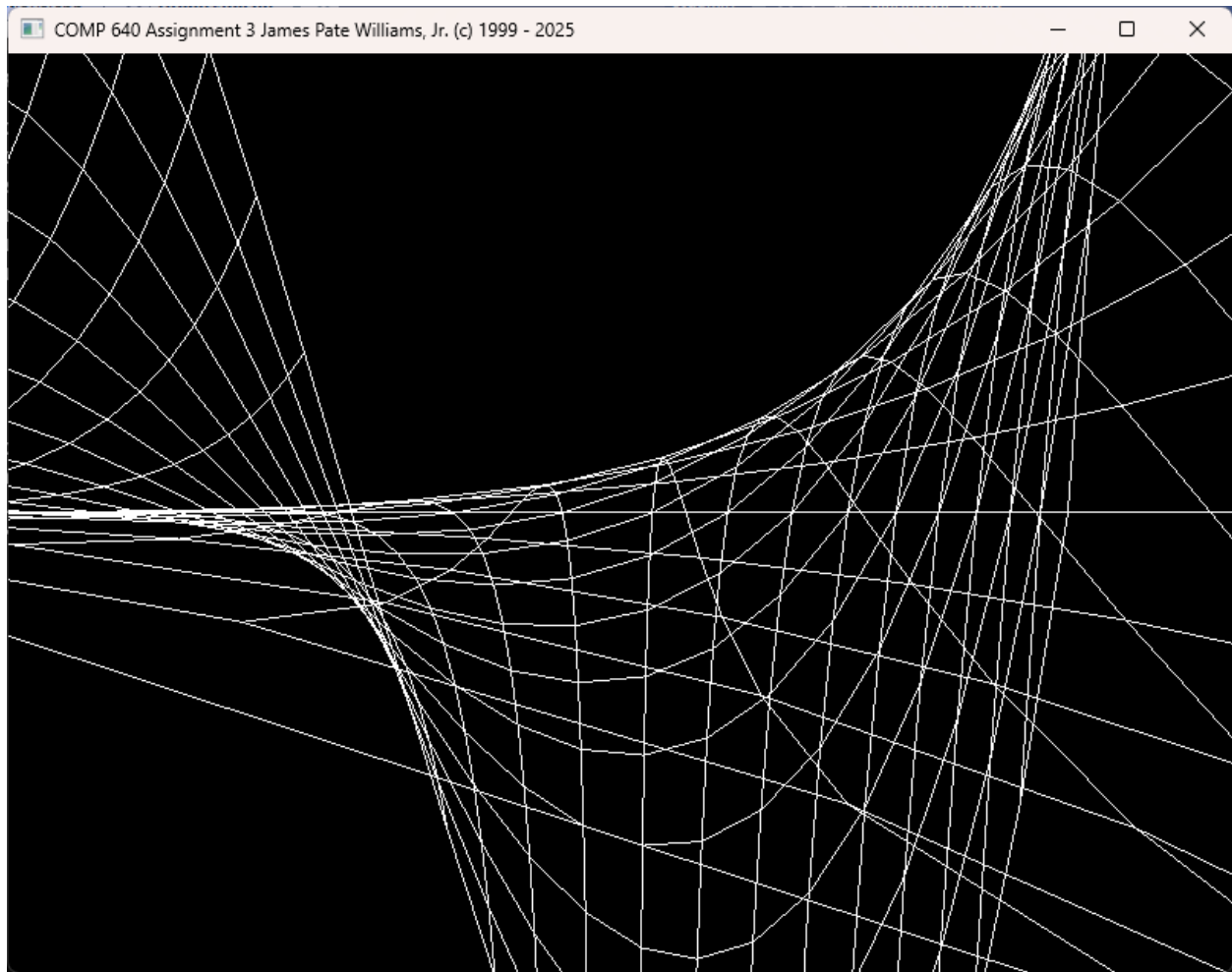


Figure 11 - Real Spherical Harmonic $Y(4, -4)$

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Microsoft Visual Studio Debug Console
Active Keys Legend:

Esc - Close the graphics window
1 - Initial view
2 - Zoomed view
3 - Sunlight mode
4 - Lantern mode
5 - Flashlight mode
< - Decrease light
> - Increase light
+ - Increase height
- - Decrease height
d - down in p perspective
D - down in P perspective
f or F - Toggle fog mode
g or G - Toggle graph mode
p - p perspective
P - P perspective
u - up in p perspective
U - up in P perspective
w or W - Toggle wireframe mode
x or X - Rotate about x-axis
y or Y - Rotate about y-axis
z or Z - Rotate about z-axis

==Function Menu==
1 Ackley's Function
2 Beale's Function
3 Booth's Function
4 Rosenbrock's Function
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Figure 12 - Main Program