Andy Wang
Saturday 9/29/18

6.839 Pset 1

Q: At a high-level, what did you implement in order to complete the assignment?

The first step was slicing the mesh by z-planes into line segments. The second step was to join those line segments into (potentially multiple) loop(s). The third step was to generate a crosshatch pattern for each loop / contour.

Q: How does that code work, algorithmically?

I did not do any special techniques, other than the simple Z-buffer.

For the joining line segments, I started out with a list of jumbled line segments in no particular order and selected an arbitrary line segment and an arbitrary endpoint. To find the next line segment, I took the other endpoint, looped through all other line segments to see if any shared that endpoint. To check point equality, I checked to see whether the distance between points is < 10^-6.

For creating the crosshatch pattern, I addressed each loop in each z-plane's contours separately. For each edge in each loop, I intersected the edge with every horizontal line (y = m_y * _infill_dx) and every vertical line (x = m_x * _infill_dx) possible, where m_x and m_y are integer constants. After assembling a list of intersections, I

sorted lists of intersections along vertical and horizontal lines, and joined every other pair of vertices.

Q: Did you do any extra credit? If so, describe it as above.

No.

Q: What did you like about the assignment?

It was overall very nice! I like the visualization.

Q: What did you not like about the assignment?

Unfortunately the FossFabVisualizer did not work very quickly, so I downloaded Meshlab to visualize my meshes quickly.

Q: Any other issues about which we should be aware?

I broke my computer in the middle while I was developing, so I talked to the professors who told me it was okay if I turned it in on Sunday.

Images of my work: