

Project 4 Improvement

CS 312, Section 1

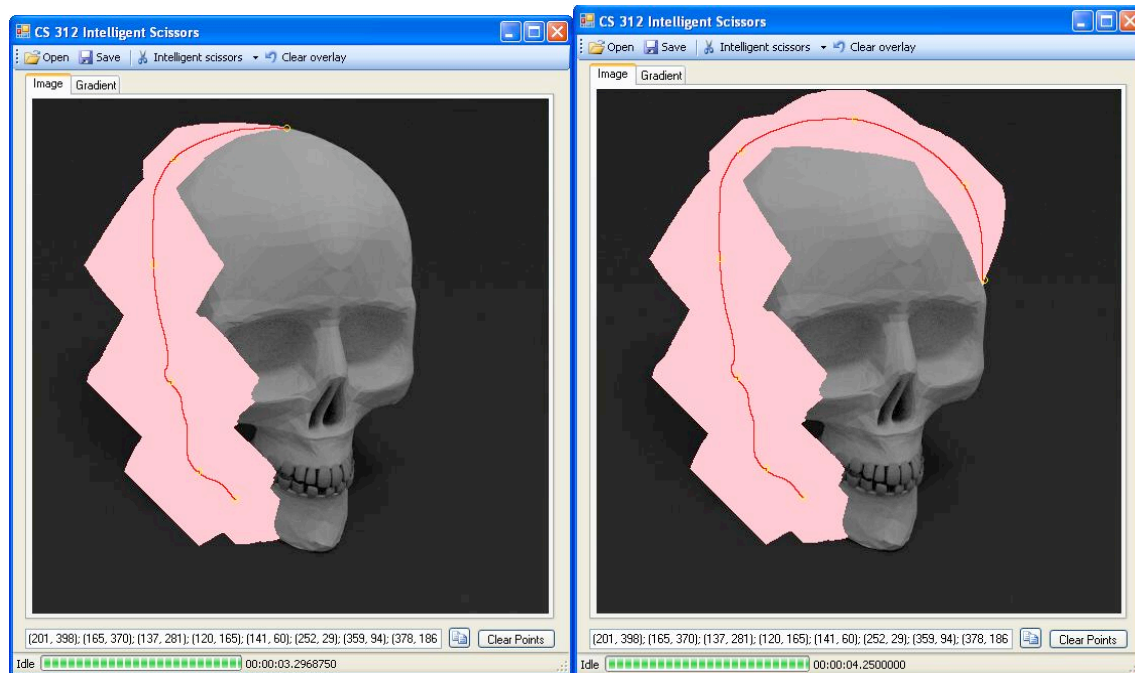
Duane Johnson

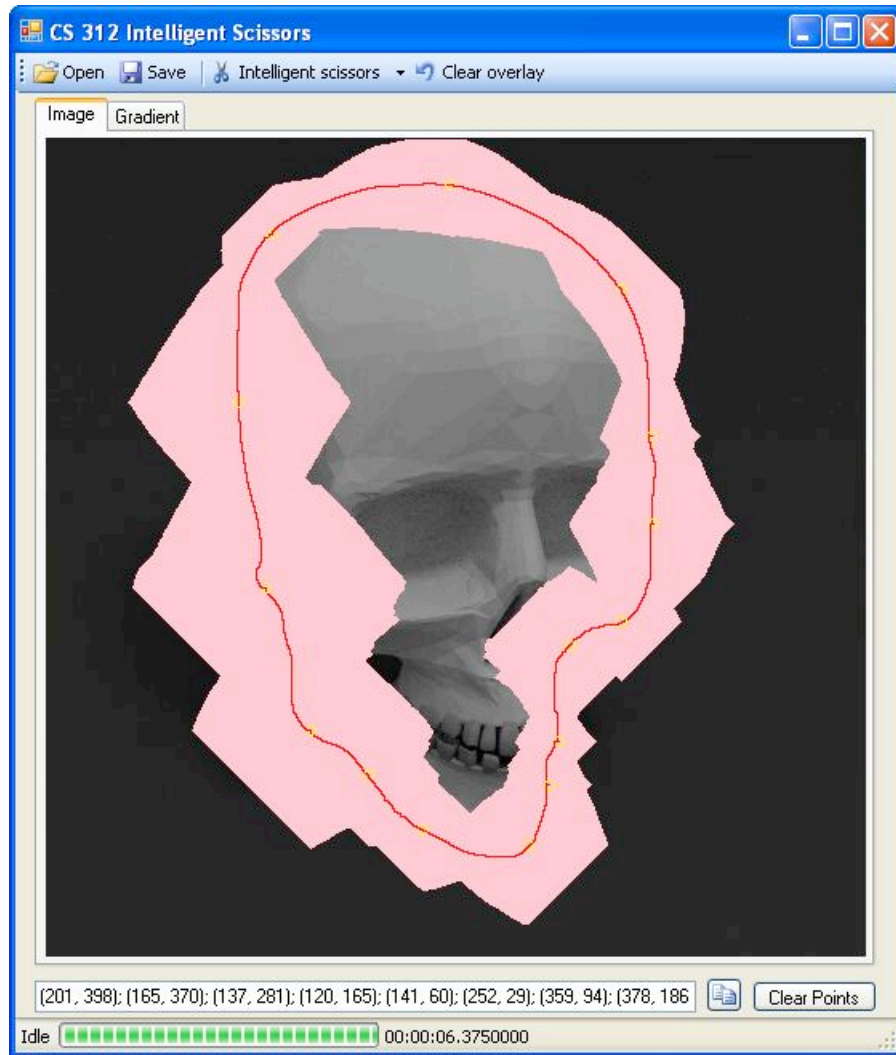
Purpose

This improvement to the Intelligent Scissors project animates Dijkstra's algorithm in real-time. It shows a pink growth pattern as the breadth-first algorithm attempt to find the lowest-cost path from one point to the next.

Description / Screen Shots

In order to make the animation work at a reasonable speed, I decided to make an update to the screen for every 500th pixel update. This makes for a smooth animated sequence that is nearly as fast as the non-animated version.





Empirical Evidence / Source Code

Here is the significant portion of the code that highlights the growth pattern in real-time:

```
if (Overlay.GetPixel(lp.point.X, lp.point.Y).R == 0)
    Overlay.SetPixel(lp.point.X, lp.point.Y, Color.Pink);
if (++counter % 500 == 0) Program.MainForm.RefreshImage();
```

Explanation of Evidence

The SetPixel function does not immediately update the screen. Instead, it updates the overlay buffer. Then, every 500th cycle, the RefreshImage function is called to show the most recent changes on the screen.