

CS184: Computer Graphics

Spring 2022

Assignment 1: Rasterizer

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Overview

TODO

In this project I implemented the following tasks:

- face morphing: morphing my face into another person's face
- mean face of the population: computing the "average" face of a population
- mean face transformation: Transforming my face into the shape of a population's average face, and the other way around

An overview of the project, your approach to and implementation for each of the parts, and what problems you encountered and how you solved them. Strive for clarity and succinctness. On each part, make sure to include the results described in the corresponding Deliverables section in addition to your explanation. If you failed to generate any results correctly, provide a brief explanation of why. The final (optional) part for the art competition is where you have the opportunity to be creative and individual, so be sure to provide a good description of what you were going for and how you implemented it. Clearly indicate any extra credit items you completed, and provide a thorough explanation and illustration for each of them.

Task 1: Drawing Single-Color Triangles

How I rasterized triangles:

My algorithm is very simple, it is essentially the same algorithm as described in lecture 2:

- Step 1: I calculate the smallest bounding boxes that bounds the triangle that I am about to rasterize
- Step 2: I iterate over all the pixels in this bounding box and test whether each pixel is inside the triangle or outside.

The point-in-triangle test I implemented follows this formula: