CSL 461

ASSIGNMENT 2- Morphing

Rishabh Singh - 2016csb10654

Introduction

Morphing, short for metamorphosing, refers to an animation technique in which one image is gradually turned into another. It's a transformation of one image to another by the gradual distortion of corresponding points. In this lab we have taken the inputs from the user and then generated morphs.

ALGORITHM

Since we have the tie points of input and output image we can easily get the tie-points of the intermediate images using linear interpolation.

$$x' = (1-t)*x_{in} + t*x_o$$

$$y' = (1-t)*y_{in} + t*y_o$$

Where x',y' are the intermediate images coordinates and (x_in , y_in) , (x_o, y_o) are the input and output image coordinates.

With the help of these tie points i created delaunay triangulation of the intermediate Image. Then for each triangle I calculated intermediate to input and intermediate to output image transformation. Then again in each triangle I iterated through the points that are inside triangle and stored the input image and output image intensities for corresponding points. Using linear interpolation I calculated the intensities of the intermediate images. Thereafter I save the output images and made a gif out of that.

Sample output:

Observation :

1. The Quality of the images observed are clear and the transition between images are clear and easily distinctable.
2. There are some points that are not mapped to any triangle due to precision of the floating points numbers so there are some black lines in the intermediate images.

Note - *There is a gif image attached with this file. See this for a clear transitions.*