Appdendix D: User Guide

The following instructions were provided to the client. They are not intended to be complete or thorough as the software being used by the client was under constant development. These instructions are not designed for an end user with a final release.

D.1. Interface

The interface consists of a window with three images, labelled Image A, Image B and Zoom. Morphs are created between the first two, and the zoom image is an aid to picking out the points to morph. Images can be scaled by dragging the scale slider or (for Image A and Zoom) by dragging the dividers between the images.

If you wish to change the default images then go to the project menu and select the load option for the image you want to replace.

By default Draw mode is enabled. This allows you to draw features on the images. You can draw on either image, but you will probably find it easier to work with the larger one. To draw a line you can either click at the start point and then click at the end point, or you can 'drag' a line from the start to the end. When you draw a line on one image it will be mirrored on the other.

For precision control, use the zoom image to see exactly where the mouse cursor is. At the bottom right the co-ordinates of the mouse within the image are shown, along with a sample of the colour under the cursor and it's component values (red, green and blue, with each on a scale of 0-255).

You can click the Edit button to switch to line editing mode. The line nearest the mouse pointer will be highlighted in red on all images. When the mouse is near either end of a line a circle will appear. This means that you can the point by holding the left mouse button down, moving the mouse, and then releasing at the new position. Only the line on the current image (and zoom) is actually moved.

Lines can be selected by right clicking when the desired line is highlighted, or simply by left-clicking when in selection mode. The line will change colour. Repeating this deselects the current line. You can select all lines using a third mouse button/wheel. Selected lines can be deleted by clicking the button marked delete.

A good way to edit images is to draw lines on one image, swap the images, and then move the lines to corresponding points on the second image. You can swap the images by clicking the swap button.

To generate the morph click the Render button. A new window will pop up. In this you can select how far between each image you want the morphed image to be, generate the image, and save a copy. To generate the morph click Render. You can also use the menus to generate warps (distortions of the source images). To save click Save Image and enter the name of a JPEG file. If you don't specify a standard extension then .jpg will be appended to the filename.

Note that morphing is a computationally intensive process, and it may take a few minutes for the image to appear after you click Render. The rendering time is roughly proportional to the number of lines, the width and the height of the image. Certain

warps and morphs may be cached. This will reduce rendering time for some images. To cross-blend the two images don't place any lines and then render as normal.

D.2. Features

The lines you draw should mark out identical features on both images. You can think of each line as having a 'field of influence' so that points near a line will move with it. The area between two lines that move towards one another will be squashed and the area between two lines that move apart will be stretched - of course, as lines rotate they can move both towards and away from each other. You may need to experiment to decide how many lines to place and where to put them, but note that the rendering time is proportional to the number of lines on the image. You might want to use lines to trace contours, e.g. around the eyes, or more generally to set image ratios, e.g. a line connecting the centre of the two eyes.

Take care not to cross lines or make them rotate excessively (check that the line is oriented the same way as the corresponding line on the other image by checking that corresponding points are circled). Generally it is best to keep contour lines close but not touching, although the best way to get a feel for the technique is to experiment.

The nature of the feature-based distortions means that parts of the image beyond its bounds may be requested. These are taken as black points. As a result the useable part of the morphed image may well be less that that of the two input images. The best way to deal with this is to put in images larger than the desired resultant and then crop the final morphed image. If you wish to minimise these effects then try drawing a frame of lines around the boundaries of the images. (Keep the lines the same on each image). This will give the edges of the images a degree of 'stickiness', but will also affect the rest of the image. For a stronger effect you can double or triple frame the borders.