IMAGE MORPHING AND TERRAIN MORPHING

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ABSTRACT

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Facial Reconstruction is a new field in Malaysia. Due to that, there is lack of new technologies regarding this field. In my research, I will be doing a comparative study on Morphing Techniques. These techniques are not related specifically to facial reconstruction. However, this research is done to study and understand morphing techniques, which is widely used in filmmaking, animations and others to give a brief idea what is morphing. This is because the morphing, which involves in facial reconstruction is more complicated and complex. There are two main techniques that I have chosen to compare between them. They are Terrain Morphing and Image Morphing. Terrain Morphing is followed from the Field Morphing presented by Thaddeus Beier in 1992 Siggraph, which will be applied to create smooth transitions between two terrain datasets. While in Image Morphing it was based on Field Morphing too but they have a new way of interpolation between images.

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CHAPTER 1

PROBLEM DESCRIPTION

1.1 Introduction

The problem of rebuilding a face from human remains has been, until now, especially relevant in the ambit of forensic sciences, where it is obviously oriented toward the identification of otherwise unrecognisable corpses; but its potential interest to archaeologists and anthropologists is not negligible. In the methodology used for 3-D reconstructions generated by spiral CT data sets, CT slices must be stacked up and interpolated in order to build a volume. Once created a volume, it is possible, by means of suitable algorithms, to generate surfaces whose points have the same function value.

Morphing technique is used to get the texture of the face. Understanding the concept of morphing techniques is important before we can apply it in facial reconstruction. In my research, several morphing techniques that are widely used in educational or entertainment purposes will be discussed.

1.2 Background of the problem

Faculty of Information Technology and Quantitative Science, MARA University Of Technology is responsible for developing algorithms to facilitate computerized facial reconstruction and identification for forensic investigation in Malaysia. This project will help to identify missing persons and homicide victims and also reduce time taken to reconstruct the face. However, because of the limited time, in my project it will be