

Universiti Teknologi MARA

**SURFACE RECONSTRUCTION USING
GRAYSCALE ANALYSIS**

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ABSTRACT

Tremendous development in technologies and application make it increase the demand of the realistic games in 3D. However, the demand raises a number of issues due to the capabilities of the realistic object construction the application. Some of the constraints are such as realistic looking facial modeling and animation is one of the most difficult problems in computer graphics. Besides that, it is difficult to construct a realistic 3D face reconstruction when only limited set of images taken from a view, is available. The input device also became one of the issues as scanner device for 3D points clouds retrieval is too expensive. In order to adapt the limitation of the budget or cost, Shape From Shading technique is being applied. Shape From Shading also can produce an accurate 3D frontal facial image. In grayscale analysis, by using the depth(z) values from grayscale image, the shape of the 2D frontal facial image will be reconstructed. The proposed algorithm tries to overcome some shortcomings in other technique such as slow and also expansive. The test results and analysis validate the ability of the proposed solution to provide accurate 3D frontal facial model with low cost.

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