

## ABSTRACT

Shape from Shading is a technique to determine shape of the object in 3D from its gray-scale 2D image. This technique does not mimic the mechanism of the human brain but is a method applied to execute in the computing world.

Optimal Thresholding is a thresholding applied to extract or separate one objects from another in the gray-scale image.

Histogram Equalization and Histogram Specification are the histogram processing technique for enhancing the contrast of the image.

Applied Shape from shading technique in reconstructing 3D image, the result may be ambiguous because of ambiguity and darkness of 2D image.

This thesis introduces Optimal Thresholding and Histogram Processing as preprocessing to relieve the effect of darkness and ambiguity in the image before reconstructing 3D image by Shape from shading.