ABSTRACT

Measurement of distance estimation on an object can be done in various ways, including by utilizing proximity sensors such as ultrasonic sensors, infrared sensors and lasers. But this method has disadvantages such as having limitations on the characteristics of the material used and has its own difficulties when associated with the orientation where the object is located.

Based on these deficiencies, this final project will design an object orientation measurement system using the Raspberry pi-based stereo vision method. This object orientation system refers to the estimated distance and dimensions of the object. Stereo vision method to measure distances and dimensions visually using two webcam cameras. Image acquisition is done at the same time interval, so that there will be two images that have the same object but from different points of view. Both images will be used to calculate the value of disparity which will be used as one of the parameters in measuring distance. Calculating the value of image disparity is done using several image processing methods, namely using Canny edge edge detection, Hough line transform line detection and Harris corner angle detection.

This final project can be used as a measurement tool for distance and dimensions of objects that move in real time with an accuracy level above 97% with a precision level of 100%.

Keywords*: Stereo vision, Image Disparity, Canny edge, Hough Line Transform, Harris corner detection.*