ABSTRACT

The distance measurement process is quite easy to do in the digital era like today, but some conditions sometimes hinder the process. Some obstacles are dark conditions and measuring objects that are difficult to reach. To answer this problem, in this Final Project a prototype of distance detection will be made using the HSV and LASER color models that are configured with a smartphone camera.

In this research, linear regression formula is used to produce a formula that will be used in the application. In addition, an algorithm was also made to detect the distance highlighted by the LASER light beam. The algorithm is poured into a GUI-based Android application.

The output of this application in the form of text that displays the results of distance detection from image capture that is processed on the Android application. The results obtained from this study are that this prototype can only reach a short distance, which ranges from 51 to 296 cm for light-colored objects, while in dark-colored objects ranging from 39 to 164 cm. The application has poor accuracy as a measurement tool, because having RMSE is 10,86 cm for dark objects while for bright objects is 28,50 cm.

Keywords: *distance detection, RMSE, HSV, android, GUI, LASER, smartphone.*