ABSTRACT

Nowadays the field of Computer Vision is growing rapidly. There are many systems that utilize this technology. From the simple image processing to the system which is able to display a 3D visualization as Google Earth. Additionally this technology can also be used in recognition systems such as object, face and character recognition.

In this final project created a system which is able to recognize and follow the movement of the text. Text is detected from the image captured by the webcam in real time. In the character recognition system is used Optical Character Recognition (OCR) Engine developed by Google, the Tesseract OCR. When the recognized text is equal to the input text, the servo motor will move the webcam based on the movement direction of the text.

From the test results it can be seen that the frame rate is influenced by the intensity of light captured by the webcam. The system can detect in maximum the rectangle at the lowest light intensity on 6 lux. The average of delay that occurred starting from the system detects the rectangle until system drive the servo motor is 0.1362 seconds. The time average required to achieve servo motor angle until 90° is 19.72867 seconds, where the fastest time is 16.21 seconds and the longest time is 27.12 seconds. Accuracy of the rectangle detection is 100% on the test on 10, 100, and 500 lux of light intensity. On tracking test of the text object, the system is able to detect the position and move the servo motors with 100% accuracy.

Keyword : Tracking Camera, OpenCV, C++, Tesseract OCR, Character Recognition