IMPLEMENTATION OF COLOR DETECTION SYSTEM FOR COLOR-BLIND PERSON ON CAMERA USING .NET PLATFORM AND EMGU CV LIBRARY

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ABSTRACT

Color blindness is the inability or decreased ability to recognize color, either particular color (partial color blind) or the whole color (total color blind) under normal lighting conditions. The disability of the patient to recognize color is potential to cause problems to the patient in daily life or in more specific area.

This color detection system is a software application to help the patient cope with the problem in identifying colors by using video stream from the camera. The system is designed in the form of a desktop application developed using EmguCV library and OnBarcode library on the framework .NET. The results of the implementation of a color detection system using augmented reality technology that can provide color information to the user. Based on test results, color recognition success rate obtained in moderate light conditions, light conditions by 82.5% and 57.5% in the dark light conditions. This indicates lighting greatly affect the success rate of color detection.

The system is also equipped with Ishihara color blind test to determine the type of color blindness suffered, so that users can diagnose disease color blind since early and this system can provide future benefits to patient of color blindness in detecting colors accurately.

Keywords: Color blindness, Color Detection, EmguCV, Ishihara method, Image processing.