

ABSTRACT

Image processing has a very important role in life, widely used in industrial area, one of that industry is automation industry. In automation industry, image processing uses start from detection products for goods, food, face recognition detection, until the detection of vehicles. Another image processing application is the detection of color.

In this final project have been designed and implemented the detection distance and direction of the ball using a camera module, image processing that performed is detect the object ball tracking using color (color detection). This method match the color with the shape of any object, so that can produce pixel and centroid values on the X and Y axis, then allocated this value to determinating the distance and the direction of the ball. The test is using CMUcam ver 3.0 which has been equipped with Omnivision CMOS camera module and the ARM7TDMI Philips LPC2106, where as a CMOS camera is a sensor for capture an image and mikrocontroller as a controller to perform image processing of the captured image. The design also uses two servo motors that move vertically and horizontally as a driver so that it can takes a visual control system. The purpose of visual control is basically applied to make a camera has the intelligence in following the direction the ball moves in certain circumstances.

Key Words: *CMU Cam3, Tracking, Motor Servo*