**Introduction**

QR (Quick Response) code is the type of 2D barcode with the sharpest increase in utilization in the past years. The most common usage of QR codes are as “physical hyperlinks” connection objects to websites. Users have to hold their camera in front of the QR codes to obtain the information while they are not able to read the blurred QR codes due to motion.

**Background**

QR codes are small squares with black and white patterns, every single one is unique. The three position detection patterns are known as finder patterns which are important for detection.

**Aim and Objective**

The aim of this project is to optimize the method of reading motion blurred QR codes captured by moving mobile phone camera. By implementing computer programming, different kinds of image processing algorithms are going to be combined with each other, so that users can obtain the information from that blurred QR codes successfully.

**Methodology**

RGB color model is to sensing, represent and display the images in electronic systems. By using RGB color model, any color background in the QR code images can be eliminated to achieve a better decoding results.

Optimization is a kind of cropping process. This can eliminate unnecessary backgrounds. Hough Transform is useful for detecting the finder patterns in the QR codes. As the position of QR codes is always different, detection on finder patterns must be done after the optimization.

**Testing**

Experimental Set-up

A conveyor machine is built by using Lego, a plastic green bracelet and a motor so that the QR code can move along with the motor at a uniform speed horizontally. Some building blocks are used to build a holder to fix the camera parallel to the ground. Besides, PWM circuit is made to adjust the duty cycle of the steady signal provided to control the motor’s speed.

Results

[URL: http://www.qrstuff.com/]

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