Evaluation of a fuzzy 3D color QR code decoder

ABSTRACT

This paper is an extension of our previous work on color QR code decoder using fuzzy logic. The input is the color QR codes with four versions which are version 3, 13, 14 and 17. These QR code versions are converted to black and white. Then, the QR codes are detected using an open source library named as Zing. Next, the color QR code is retrieved by mapping the black and white QR code with the color image. This is followed by enhancing the color QR code using fuzzy logic. After that the QR code is split into three QR codes, red, green and blue. Each of the color is decoded to get the original file text file. We made a comparison on the success rate for our decoder with other existing decoder. We take in consideration number of color used, camera resolution, QR code version, and QR code error correction level. The comparison with other research work show that by using fuzzy logic improves the decoding success rate up to 93.33% using the same parameter from other research work.

Keyword: Fuzzy; QR code; QR code version; Color QR code; Decoder