

Colour Quick Response Code with High Damage Resistance Capability

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Abstract : Today, QR or Quick Response Codes are prevalent, and mobile/smart devices can efficiently read and understand them. Therefore, we can see their appearance in many areas, such as storing web pages/websites, business phone numbers, redirecting to an app download, business location, social media. The popularity of the QR Code is mainly because of its many advantages, such as it can hold a good amount of information, is small, easy to scan and read by a general RGB camera, and it can still work with some damages on its surface. However, there are still some issues. For instance, some areas needed to be kept untouched for its successful decode (e.g., the “Finder Patterns,” the “Quiet Zone,” etc.), the capability of built-in auto-correction is not robust enough, and it is not flexible enough for many application such as Augment Reality (AR). We proposed a new Colour Quick Response Code that has several advantages over the original ones: (1) there is no untouchable area, (2) it allows up to 40% of the entire code area to be damaged, (3) it is more beneficial for Augmented Reality applications, and (4) it is back-compatible and readable by available QR Code scanners such as Pyzbar. From our experience, our Colour Quick Response Code is significantly more flexible on damage compared to the original QR Code. Our code is believed to be suitable in situations where standard 2D Barcodes fail to work, such as curved and shiny surfaces, for instance, medical blood test sample tubes and syringes.

Keywords : QR code, computer vision, image processing, 2D barcode

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