A NOVEL QR-CODE GENERATOR FOR ANY TYPE OF REAL TIME WEBSITES

Guide: Mrs. GEETHA PRATHIBA

Assistant Professor, Department of CSE,**MALLA REDDY ENGINEERING COLLEGE FOR WOMEN** ,TELANGANA,India

P.LIKITHA SAI[1],P.LIKHITHA[2],O.SRI HARSHITHA[3],P.S.MANI DEEPTHI[4]

B.Tech Pursuing, Department of CSE, **MALLA REDDY ENGINEERING COLLEGE FOR WOMEN**, TELANGANA, India.

ABSTRACT

Quick Response (QR) codes have grow to be an essential factor to allow quite a number technical options and are being used through hundreds of thousands of human beings round the world each and every day. With the incredible extend in utilization of QR codes and the developing wide variety of functions generally together with touchy duties such as fee and ticketing, it turns into imperative to recognize the modern kingdom of the technology, its implementation,limitations, and scope for future work. The current paper is aimed at satisfying this cause and gives an evaluation of the brand new advancements in QR code detection and pre-processing technologies. The find out about additionally displays the multi-step technique of QR code recognition, by using this paper it is accomplished to assist organizations in optimally adopting the science for their respective needs.

INDEX TERMS: Quick Response,Technical Options,Implementation,Multi-Step Technique

1. INTRODUCTION

Quick Response (QR) code is a two-dimensional barcode using the ISO/IEC 18004:2006 (it is revised in 18004:2015) standard [1]. A QR code is generated by following certain protocols, the same of which are utilized for its decoding. While generation of a QR code is a straightforward process, the main challenge lies in recognizing it with greater accuracy and speed. Getting information from a QR code in real world environments comprises of three vital steps: localisation, image preprocessing and decoding. Localisation refers to the detection of a QR code and its exact coordinates or location in an image. Image pre-processing is an intermediate step where the detected QR code's image is improved to reduce blur, noise, distortion, angular perspective, etc to enable accurate decoding. Decoding is the final step where the information/data is retrieved and relies on the main standard architecture of the QR

code [2]. The maximum work and innovation has been done for the former two steps, hence, the review shall focus on them with greater focus. The analysis has been systematically divided into sections and subsections based on their tasks to make it the most suitable for its primary purpose of assisting in optimal adoption and future innovation. The reason behind this approach and the understanding that it perfectly complements our purpose lies in the fact that the expressed tasks in the QR code recognition workflow (localization, pre-processing, and decoding) are independent and enjoy different benefits with different algorithms. Hence, knowing the strengths of respective algorithms will help in choosing the most suited for every step with respect to the organization's needs. The methodology for Systematic Literature Review and detailed in this paper is explained in Section 2. Following, the main review is given in Section 3. The overview and the conclusions are given in Section 4 and 5 respectively.

2. <u>LITERATURE SURVEY</u>

3. 2. SLR METHODOLOGY

The Systematic Literature Review (SLR) is being done to understand and analyse the latest advancements in QR code detection and pre-processing. It is to be noted that there are very few literature reviews on this topic which makes the study and advancement in this field rather difficult for future innovation. Therefore, the current systematic literature review being done even more meaningful. While studying this review, it shall become clear to the reader that in essence, no algorithm is the definite choice for any task and it is directly dependent upon the intended application. The presented SLR has been inspired in its layout and design from [3] and [4] for their simplicity and effective presentation. It shall be noted, that even though [3] and [4] are reviews on image captioning and not QR code detection, they have been used for inspiration in design/structure of an SLR and not the content. In addition, almost all the design decisions have been taken with respective to the study in particular, to be able to best present the data retrieved and our analysis of it.

2.1. Search Sources

Digital libraries and the internet have been utilised to accumulate the journals, conference papers, industry standard source codes and documentation for study on QR detection. The libraries used are as follows:International Journal on "Technical and Physical Problems of Engineering" (IJTPE), Iss. 46, Vol. 13, No. 1, Mar. 2021 112

1. IEEE Xplore [5]

2. ACM Digital Library [6]

3. IET Digital Library [7]

4. Sci-Hub [8]

5. arXiv [9]

For this SLR to be relevant and to best highlight the latest advancements, research papers from 2016-2019 have been preferred for the content and review. However, it is also studied some important landmark research papers outside of this time range (e.g. "Fast component-based QR code detection in arbitrarily acquired images" by Belussi and Hirata, 2013 [10]) to get better understanding from roots of these advancements.

2.2. Parametric Findings

The following parameters have been carefully formulated through the present study of the technology and will help in the optimal structural division as described in introduction.These parameters are found as the major topics of focus in the research papers studied.

1. Detection/localization

 • Time

 • Accuracy

2. Pre-processing

 • Angular perspective

 • Motion and blur

 • Illumination variance

3. EXISTING SYSTEM

With the tremendous increase in usage of QR codes and the growing number of applications mostly including sensitive tasks such as payment and ticketing, it becomes vital to understand the current state of the technology, its implementation, limitations, and scope for future work

4. PROPOSED SYSTEM

5. The present paper is aimed at fulfilling this purpose and provides an analysis of the latest advancements in QR code detection and pre-processing technologies. The study also reveals the multi-step process of QR code recognition, by this paper it is achieved to help organizations in optimally adopting the technology for their respective needs.
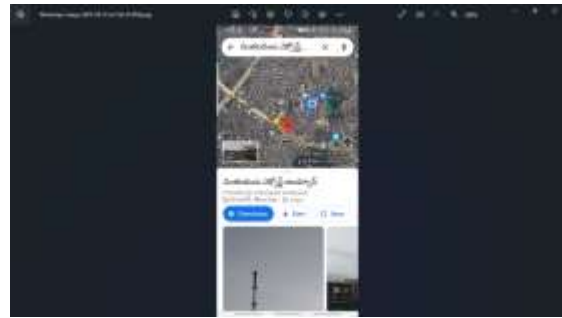
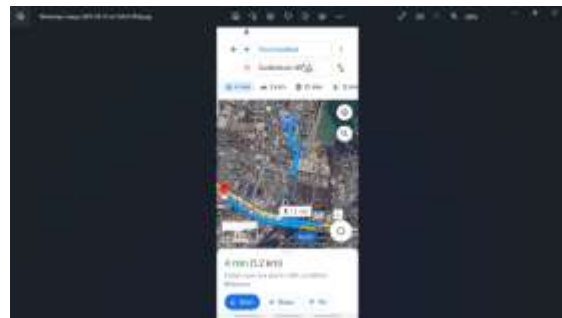## 5.SYSTEM ARCHITECTURE
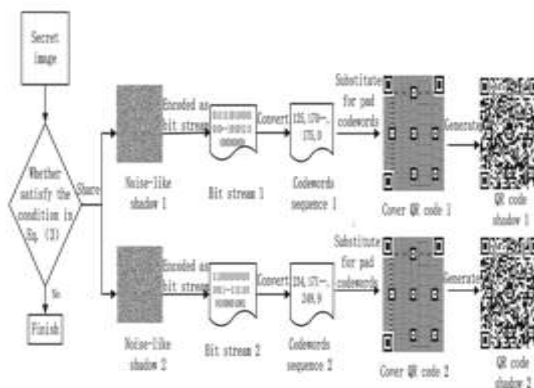
6.RESULT

Here we have to enter real time website details for generating QR code


QR code given url details

Here after enter the website details and click on the generate code button

Here QR code will be generated like this

7.CONCLUSION

Owing to the commercial applications of QR codes and the real life scenarios, scanning using a smartphone camera has been the most common method of adoption. This involves three major steps as discussed in the introduction- localisation (detection), pre-processing, and decoding. That means that different algorithms can be applied by the organization concerned for their applications for different stages. Hence, this review shall help in determining the most suitable algorithm for each stage for commercial use and also the fundamental understanding from various aspects for researchers. While conducting this study, one major hurdle
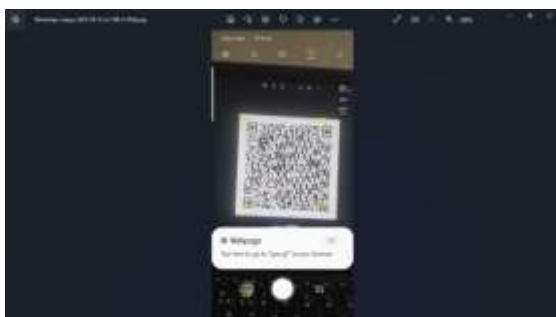
Here take scan QR code form mobile phone

faced is the lack of a common trusted and preferred database for researchers. This has made benconsequently the comprehensive study the technology too. Many authors including Nina S. Hirata and others have

time and again pledged to make their datasets available publicly, and it is important to establish a standard database to produce a conducive environment for future work. With the increasing computational power of mobile devices, focus on time optimization has been less against accuracy, and fairly so. Deep learning has been seen as a preferred technology among researchers for QR code detection, which is also very versatile in terms of the training dataset used. Finally, with the understanding that QR code decoding from a static image is easy to implement and beneficial, it is aimed here to urge organizations to adopt static detection and decoding too for greater possibilities.

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AUTHOR

Mrs. Geetha Prathiba Assistant Professor Department of CSE MallaReddy

Engineering   College   for   Women,   geethaprathibha2023@gmail.com,Hyderabad