Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE
(All Programs Accredited by NBA)
Department of Information Technology

Using AI for Designing ID Cards Embedded with Invisible QR Code

Group No. 19

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Project Guide & Co-Guide
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Contents

1. Introduction

- Problem Identified :

  ID card contains personal information of the person (e.g. Mobile no. , address etc), this information can be misused if fallen into wrong hands.

- Solution Proposed :

  In the proposed system, we generate a QR code consisting of the user info and embed it (Invisible QR code) in the user Photo on the ID card.

2. Objectives

1. To provide data security by data hiding.
2. To maintain integrity and readability of the ID card by hiding the QR and providing necessary information.
3. To reduce data exposure and security threat.
4. To develop a QR code generator using pyqrcode module in python.
5. Embed the QR code generated in the required image using CNN.
6. To develop a QR scanner to decode the QR code.
7. Create a web based application which will generate report based on the data fetched from scanner.

3. Problem Definition

Identification cards or Id cards are the most important credential for any organization and it helps uniquely identify the person or verify them. But these ID cards contains personal information of the person (e.g., Mobile no., address etc.), this information can be misused if fallen into wrong hands. In our project we are proposing a system where we will generate a QR code consisting of the user info and embed it (Invisible QR code) in the user Photo on the ID card.

4. Technological Stack

1.Python (pyqrcode, NumPy, matplotlib)

2.CNN (FC-DenseNet, convolution, ReLU)

3.Express

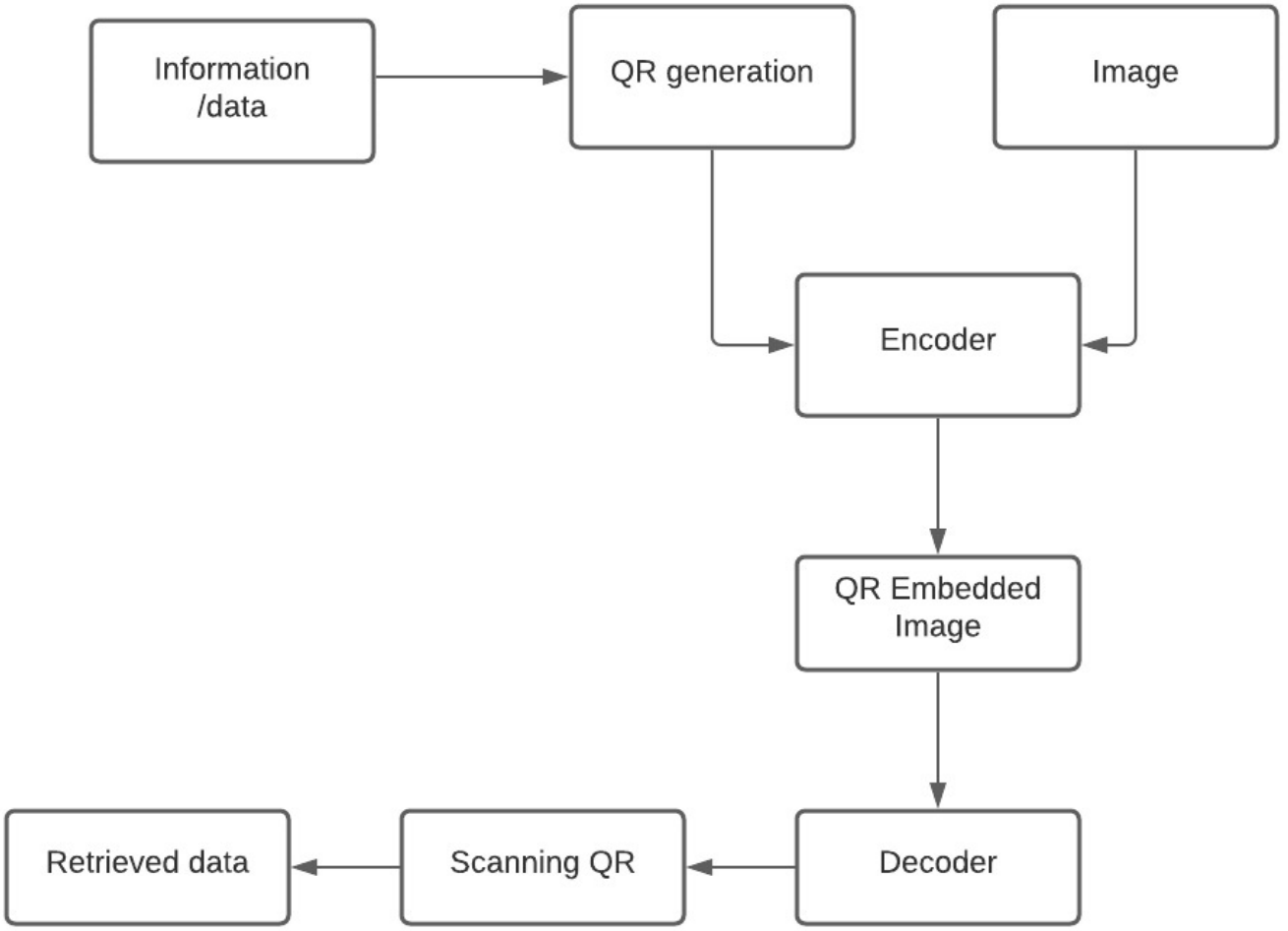
4.React

5.Node JS

5. Reviews and Suggestions

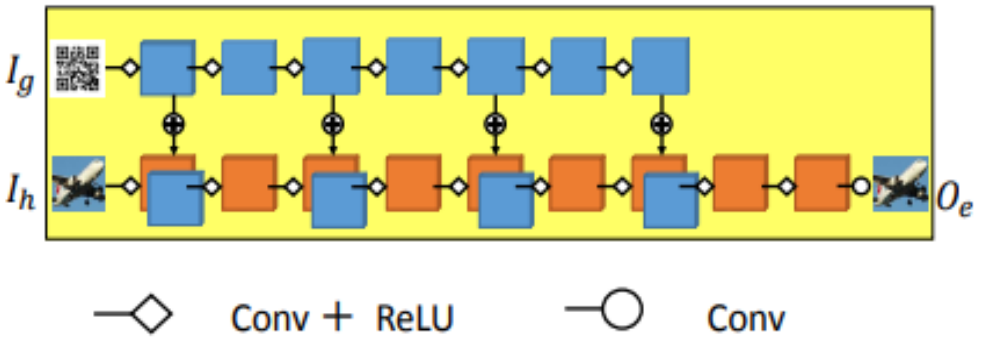
1. To change title of the project.
2. Make title, abstract and intro ML based.
3. Add more CNN and ML related keywords.

6. Proposed System Architecture/ Working

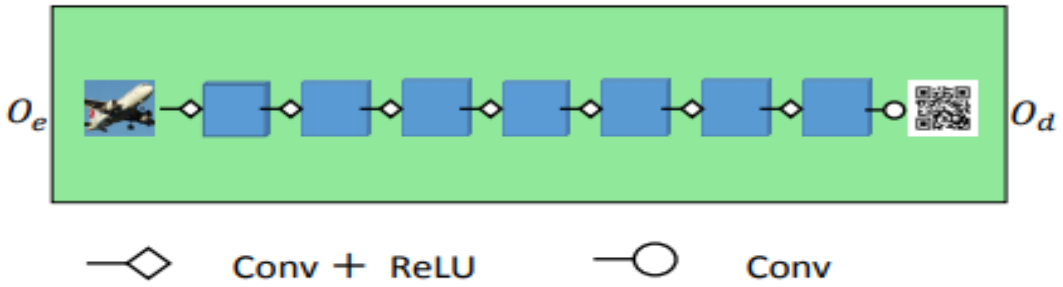


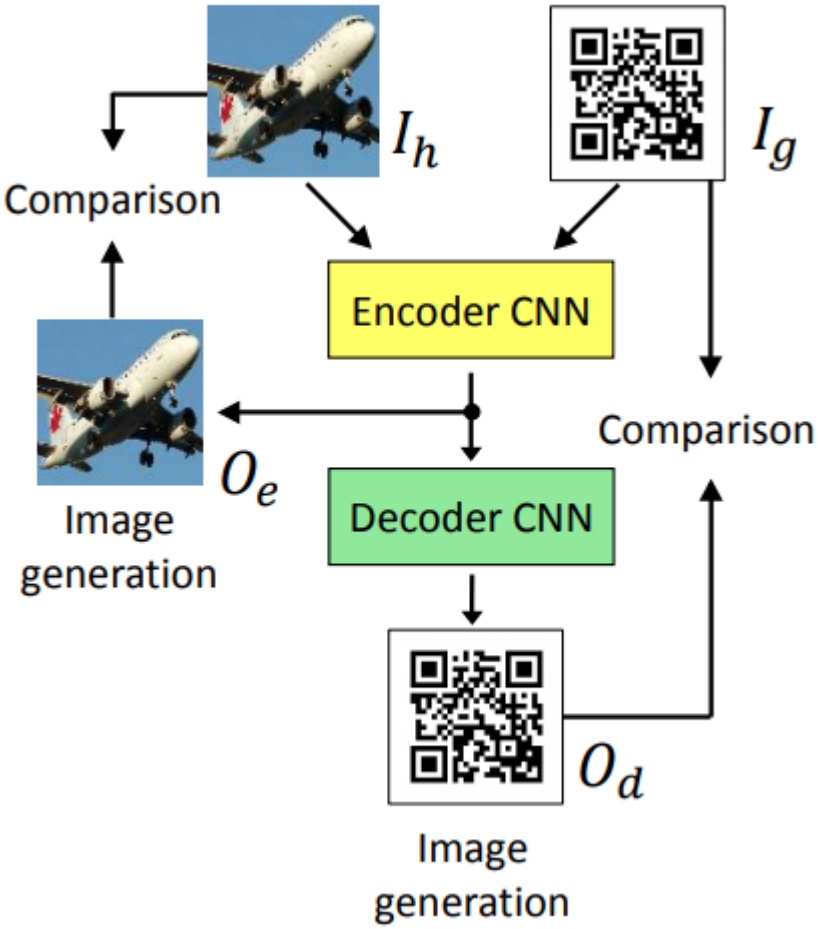
7. Prototype Design Demonstration (Desired)

Encoder CNN :



Decoder CNN :





Source: *K. Yamauchi and H. Kobayashi, "A CNN based invisible QR code generator for human living space," IECON 2019 - 45th Annual Conference of the IEEE Industrial Electronics Society, Lisbon, Portugal, 2019*

Qr Code Generator

Student Detail

Student ID

Name

Address

Contact_Number

Branch

QR Generate **Clear**

Student QR Code

No QR Available

QR Generator

Qr Code Generator

Student Detail

Student ID	18104002
Name	Chirag Jain
Address	Thane
Contact_Number	8850957038
Branch	IT

QR Generate **Clear**

QR Generated Successfully!!!

Student QR Code

8. Implementation Status

1. Done with the QR code generator.
2. Learned and training FC-DenseNet model and tried implementation.
3. Working on Solving error in the dataset of training DenseNet model.

9. Status of paper draft and targeted conference

1. Completed Abstract.
2. Completed Introduction
3. Completed Literature Review.
4. Working on System Architecture and model.
5. IEEE Symposium om Security and Privacy
6. ICACIT – 2022 International Conference on Advanced Computing and Intelligent Technologies

Thank You...!!