Smart Gate

GitHub link: https://github.com/hemalatharameshgari/batch-A04-smartgate

Batch No: A-04

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Abstract

- **Smart Gate Technology** is based on Embedded systems and Deep Learning. It involves face recognition and raspberry pi. Smart gate is used to allow only valid persons.

Existing Systems

Normal gate:

- It opens the gate without any authorization

Automatic gate:

- Just as sensor without validation

- Limitations:
  - No security
  - Time Taking Process

Proposed System:

- Raspberry pi with validation check
  - Checks the image with existing dataset
  - If it is exist then it opens the gate otherwise it does not open the gate
  - Scope of our project:
    - It is a supervised learning.
    - Only one person should stand Infront of the camera

Facial recognition:

A **facial recognition system** is a technology capable of identifying or verifying a person from a digital image as a source. There are multiple methods in which facial recognition systems work, but in general, they work by comparing selected facial features from given image with faces within a database.

Requirements

Hardware Requirements:

RAM : 4GB

Processor : intel core i3

Raspberry pi model 3

USB camera

Stepper motor

32 GB memory card

Software requirements:

Raspberry pi OS

Python IDE

OpenCV

References:

- https://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_objdetect/py_face_detection/py_face_detection.html#face_detection
- https://www.superdatascience.com/blogs/opencv-face-detection

Queries

THANK YOU