AMITY UNIVERSITY MUMBAI

AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of Computer Science & Engineering

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Mini Project on

ID Recognition and log manager for security purpose

Submitted in partial fulfilment of the requirements

for the degree of

Bachelor of Technology

(Computer Science & Engineering)

Submitted By

L.P.Shreya

Under the guidance of

Dr. Deepa Parasar

Declaration of Academic Integrity

We declare that this written submission conveys our ideas in our own words. We have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/date/fact/source in our submission.

We understand that any violation of the above will be cause for disciplinary action by the institute and they can evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

(Student Signature)

Date: 07/05/2021

Approval

This is to certify that Ms. L.P.Shreya have satisfactorily completed their project on ID Recognition for security purpose during the academic term 2020-2021 and their report is approved for Machine Learning submission.

Examiners

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Date:07/05/2021

Place: MUMBAI

CERTIFICATE

This is to certify that the project entitled “ID Recognition and log manager for security purpose ” is a bonafide work of Ms. L.P.Shreya submitted to the Amity School of Engineering and Technology, Amity University Mumbai in partial fulfilment of the requirement for the degree of B.Tech Computer Science & Engineering.

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(Supervisor) (**Coordinator, Department)**

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Dr.Shrikant Charhate

(Director, ASET)

ACKNOWLEDGEMENT

This is to certify that I,**Ms. L.p.shreya,** a student of BTECH CSE (2018-22), Amity School of Engineering and Technology, Mumbai has worked under the able guidance and supervision of **Dr. Deepa Parasa**r, designation Faculty Guide.

This project report has the requisite standard for the partial fulfilment for the Course Machine Learning in the Undergraduate Degree in Computer Science and Engineering. To the best of my knowledge no part of this report has been reproduced from any other report and the contents are based on original research.

I am aware that in case of non -compliance. Amity School of Engineering and Technology is entitled to cancel the report.

ABSTRACT

Security in organisations has become a key role nowadays because of the growing strength of population and in such cases intruders get an upperhand to disguise themselves in the crowd.The traditional system of security at the entrances has been witnessed to a lot of breaches and corresponding crimes therefore we initiated this project to replace the traditional human security completely.

This project is based on ID Recognition and maintenance of the record for the security purposes. Besides the existing technology we have tried to introduce some new features that could be beneficial for the organisation and their members . We have tried to explore and make the complete fulliness of the scanning technology to make tedious tasks quicker and easier.

Integrating this system with other applications can make it more secure, reliable and efficient.

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CHAPTER 1

Overview: DigID-ID recognition and security log manager

DigID - is a software that will be able to scan ids at the entrance of the premises to maintain entry and exit logs of the person (as verified and given by the organisation itself). The visitors or guests will be given guest ids .Thus , it would be easier to segregate between the visitors and the representatives. So only the visitor's information needs to be manually entered into the database while for others ,they just have to scan and proceed.

Problem statement

The need of such software is to reduce the time taken during verification of identity of the person . The old mechanisms are incompetent at maintaining day to day entry and exit logs because:

- Takes ample amount of time to note down the details of the person.
- Incapable of coping with the large crowd.
- Registers can be lost easily.
- The record entered might be incorrectly noted by the security person.
- The entering/exiting person might give incorrect information. (bymistakely or intentionally thus he/she can be a potential intruder)

Motivation

We have personally witnessed at our college entrance that Security persons couldn't handle the large crowd of students (both non hostellers and hostellers). Whilst non hostellers can just show id and proceed thus leaving no written records of their presence in the premises while the hostellers need to enter when they are entering /leaving .Managing large crowd

becomes tough as some students might have to wait for a long time to fill in details Whereas some mischievous student enter invalid information therefore we are trying to introduce this software which will help to maintain better records of everyone within the building .

Literature Survey

Valora operates 2,700 small scale retail outlets across Switzerland, Germany, Austria, Luxembourg and the Netherlands, offering convenience and food that's quick and fresh. They've recently gone one step further, launching 24/7 cashless convenience at avec stores, where customers self-scan and pay for their shopping with the avec mobile app, powered by Scandit.The scan engine for the mobile app had to perform fast, error-free barcode scanning for self-scanning shopping plus optical character recognition (OCR)to read the identity documentation needed for customer registration during the initial onboarding process. Scandit's Barcode Scanner SDK and ID Scanning provided both capabilities.

CHAPTER 2

Specifications

- Individuals will also have records of everyday checkpoints via whatsapp so that there can be two way maintenance of records.
- Apart from saving purposes, these immediate alert messages to the user after ID scan can act as a confirmation in cases of emergency.
- Individuals are classified on the basis of their regularity and if they fail to meet certain criteria, then an alert message would be sent to them via email/whatsapp.
- The records are maintained date-wise for easy retrieval of data.

Areas of Application

It can be implemented at any place where maintenance of records are essential such as :-

- Corporate Organisations
- University
- Schools
- Libraries
- Hospitals
- Stores
- Warehouses

CHAPTER 3

Implementation of DigId

- Capturing image and storing it
- Scanning the image
- Text recognition
- Text extraction
- Checking with the predefined data
- Entering the system time to the record file
- To Classify individuals on the basis of their regularity
- To Implement date-wise saving of records.
- To determine the accuracy of this project.
- To maintain multiple entries of an individual in same record
- A message is sent on the authorized contact number whenever the ID card is scanned.
- Sends Monthly Attendance Status

Tesseract

Tesseract is an optical character recognition engine for various operating systems. It is free software, released under the Apache License. Originally developed by Hewlett-Packard as proprietary software in the 1980s, it was released as open source in 2005 and development has been sponsored by Google since 2006.

In 2006, Tesseract was considered one of the most accurate open-source OCR engines then available.

OpenCV

OpenCV (Open Source Computer Vision Library) is a library of programming functions mainly aimed at real-time computer vision. Originally developed by Intel, it was later supported by Willow Garage then Itseez (which was later acquired by Intel). The library is cross-platform and free for use under the open-source Apache 2 License. Starting with 2011, OpenCV features GPU acceleration for real-time operations.

PyWhatKit

Python offers numerous inbuilt libraries to ease our work. Among them pywhatkit is a Python library for sending WhatsApp messages at a certain time, it has several other features too.

Following are some features of pywhatkit module:

1. Send WhatsApp messages.
2. Play a YouTube video.
3. Perform a Google Search.
4. Get information on a particular topic.

In Python3 pywhatkit module will not come pre-installed, so you can install it by using the command

```
pip install pywhatkit
```

The simplest way of using pywhatkit module which utilises the WhatsApp webpage to automate messages sending to any number on WhatsApp. But make sure that you have logged into your WhatsApp in your browser.

Syntax: pywhatkit.sendmsg(“receiver mobile number”,”message”,hours,minutes)

Parameters:

- Receiver mobile number: The Receiver’s mobile number must be in string format and the country code must be mentioned before the mobile number.

- Message: Message to be sent(Must be in string format).
- Hours: This module follows the 24 hrs time format.
- Minutes: Mention minutes of the scheduled time for the message(00-59).

Decision Tree Classifier

Decision Trees (DTs) are a non-parametric supervised learning method used for classification and regression. The goal is to create a model that predicts the value of a target variable by learning simple decision rules inferred from the data features. A tree can be seen as a piecewise constant approximation.
Some advantages of decision trees are:

- Simple to understand and to interpret. Trees can be visualised.
- Requires little data preparation. Other techniques often require data normalisation, dummy variables need to be created and blank values to be removed. Note however that this module does not support missing values.
- The cost of using the tree (i.e., predicting data) is logarithmic in the number of data points used to train the tree.
- Able to handle both numerical and categorical data. However scikit-learn implementation does not support categorical variables for now. Other techniques are usually specialised in analysing datasets that have only one type of variable.
- Able to handle multi-output problems.
- Uses a white box model. If a given situation is observable in a model, the explanation for the condition is easily explained by boolean logic. By contrast, in a black box model (e.g., in an artificial neural network), results may be more difficult to interpret.
- Possible to validate a model using statistical tests. That makes it possible to account for the reliability of the model.
- Performs well even if its assumptions are somewhat violated by the true model from which the data were generated.

CHAPTER 4

Future Goals

- To make it more efficient, more dynamic and real time supporting application.
- Also, we can link this application in such a way that we can use it at most of the areas where we need to scan our ids and also use it as a verification at a nationwide level.
- Also, we can amend this application in such a way that it becomes organisation independent where we shift our concern to the person's whereabouts. Whenever a person Scan his/her Id card which is registered under his/her number it gets recorded and maintained for security purposes.
- We can also link it with our payment methods which reduces the need of carrying multiple cards and just carry this one id which can be used as an identity proof and also as a payment card. When you scan this at a store, a request is sent on your upi id for the payment of the services.
- To pitch it to investors to make it a reality in our everyday life.

Conclusion

We are aiming to expand the services provided by the scanning technology and utilize the data obtained by it to perform other fruitful operations which can benefit not only the organization as a whole but even the individuals belonging to it.

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