DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

PROJECT PHASE - 1

# Project Scope:

In today’s era almost all tasks are digitalized. We have

Smartphone in hands and it is nothing less than having world at your fingertips. These days

we aren’t even using fingers. We just speak of the task and it is done. There exist systems

where we can say Text Dad, “I’ll be late today.” And the text is sent. That is the task of a

Voice Assistant. It also supports specialized task such as booking a flight, or finding cheapest

book online from various ecommerce sites and then providing an interface to book an order

are helping automate search, discovery and online order operations.

Voice Assistants are software programs that help you

ease your day-to-day tasks, such as showing weather report, creating reminders, making

shopping lists etc. They can take commands via text (online chat bots) or by voice. Voice

based intelligent assistants need an invoking word or wake word to activate the listener,

followed by the command. We have so many virtual assistants, such as Apple’s Siri,

Amazon’s Alexa and Microsoft’s Cortana.

This system is designed to be used efficiently on desktops. Personal assistant

software improves user productivity by managing routine tasks of the user and by providing

information from online sources to the user. It is effortless to use.

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Face detection is basically a category of biometric software that is used to map an individual’s facial features and stores that as a face print of that particular person. The current technology amazes people with amazing innovations that not only make life simple but also bearable. The future of facial detection technology is bright. Forecasters opine that this technology is expected to grow at a formidable rate and will generate huge revenues in the upcoming years. The world is using this technology at a rapid rate and enjoying its benefits alongside.

The major segments which are deeply influenced by this technology will be security and surveillance. Along with this, some of the other areas in which it’s increasing its identity are private industries, public buildings, schools and many more. As per the estimation, it comes forward that retailers and banking systems will also be going to adopt this technology in the coming years in order to keep the frauds credit and debit card payments and purchases. Though, in this technology there would some loopholes too which would fill it of inadequate password system. In the upcoming years, the technology that is being used by the robots may also come to foray and this thing could be very helpful especially in the tasks that are impractical or difficult for human beings to complete.

Some of the common use cases or scopes of this technology particularly in India are as:

* There is a huge quantity of duplicate voters in India, and to prevent this basically a database of all the voters of all the cities is supposed to be prepared and on the voting time, the resolution camera for the purpose of face recognition equipped of voting site will accept a voter’s face and generates the recognition for voting if the match is found.
* For ATMs in India, fraud is a common thing and to prevent it from this it is supposed to prepare the database of the ATM users basically the customers of bank and deploy the good resolution cameras along with the face recognition software in it in the ATMs. When a person is going to withdraw money from it, his photo will be captured by the camera and permit the access of the same after being that person is matched from that database
* It would be useful in verifying the identity of terrorists at airports, railway stations and malls as this technology will be the best choice in India as compared with other biometric technologies since other technologies cannot be helpful in crowdy places.
* This technology can also be used effectively in various important examinations such as SSC, HSC, Medical, Engineering, MCA, MBA, etc. The examinee can be identified and verified using Face Recognition Technique.
* It can also be deployed in police station to identify and verify the criminals.

# Planning and Task Definition:

Basically, there are three phases of this project in which it is to be completed, these are as:

* Detecting the face and gathering the data.
  + It’s the first phase and the most common and basic task of this project to detect the face so as to recognize it. For this purpose, Cascade Classifier is used. Cascade classifier is a machine learning-based approach where a lot of positive and negative images are used to train the classifier, where positive images contain the images which we want our classifier to identify and the negative images of everything else, basically, which do not contain the object we want to detect.
  + Firstly, we just create the directory at the location where we want to develop our project and after that create a subdirectory where we will be storing the facial samples and make it a dataset for our project.
* Training the recognizer.
  + It’s the second phase of this project, in this we are to take all the users’ data from our dataset and open cv recognizer, which is done directly with the help of a specific open cv function and the result for the same will be a .yml file that will be saved on a directory.
* Recognizing the face.
  + It’s the third and final phase of our project. In this phase, we are to capture the face on the camera and check whether if this person had his face captured earlier, then our recognizer will further predicate for that and show its response that how sure and confident it is about that person’s face.

STUDENTS DETAILS

|  |  |  |
| --- | --- | --- |
| Name | UID | Signature |
| Anish Show | 20BCS3655 | Anish |
| Upesh Kumar Soni | 20BCS3719 | Upesh |

APPROVAL AND AUTHORITY TO PROCEED

We approve the project as described above and authorize the team to proceed.

|  |  |  |
| --- | --- | --- |
| Name | Title | Signature |
| Neha Sharma (E12652) | Supervisor |  |
| Namit Chawla (E11486) | Co-supervisor |  |