



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

E-KYC Verification Portal Using ML

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Abstract The purpose of this project is to create verification portal with the help of Machine Learning for the ease of customers to update and validate their credentials for banking purposes like creating a bank account, applying for a loan, and various other business purposes, for the purpose of convenience and saving time. It involves collecting basic identity & address information about the customer. Regulatory agencies have been coming down heavily on defaulting organizations thereby forcing many of them to invest in state of the art financial transaction surveillance systems.[2] This will not only speed up the process of KYC phenomenally, it will also make it error free. In our mobile application, the customers can update their KYC by capturing photos of their AADHAR credentials. The app will use OCR (Optical Character Recognition) to minimize the typing errors and thus fills up the form without errors, saving valuable time.

I. INTRODUCTION

E-KYC (Electronic KYC) is a digital customer KYC verification procedure wherein the identifying details of a customer desirous of obtaining services from a regulated business are verified electronically. [e-KYC](#) primarily involves KYC verification through the [UIDAI](#) (Unique Identification Authority of India) database and is completely paperless, requiring no physical documentation. The only prerequisite for [e-KYC](#) is the possession of the 12-digit Aadhaar number. This, along with a registered mobile number (in most cases), is all customers need to complete KYC procedures.

COVID-19 (also known as the Coronavirus) is having a profound impact on every part of our lives, and KYC is no exception. The current global pandemic has posed a massive challenge for organizations who are obliged to perform KYC checks and monitoring. What COVID-19 has emphasized is the need for digitized services in the age of social distancing. The many restrictions on movement and the fear of contamination surrounding COVID-19 has triggered an industry-wide rush to adopt electronic verification. Relying solely on paper documents makes it impossible to comply with the regulations surrounding the Coronavirus. As it stands, for many services, customers are not able to present documents in person. Electronic KYC verification solves all of these problems. Normally, customers fill forms manually on sheets of paper. This can lead to a lot of discrepancy because of human errors, illegible handwriting, and malfunctioning writing material. This could lead to a lot of wastage of paper (considering this is a process adopted worldwide). Next, there could be errors made by the authorities responsible for data entry, while referring the handwritten form. Further, there could be inconsistency in the customer data because of the way customers enter their data, causing major validation problems to the customer whose original purpose was to validate their identity in the first place. The answer is to use credentials recorded by recognized authorities like Income Tax Department and the Unique Identification Authority of India (UIDAI), such as Aadhaar Card, to help solve this problem. These official credentials are used to enter customer data for KYC by capturing user data from the physical card. Electronic KYC verification solves all of these problems. No documents are required and the whole process can be carried out remotely

KYC Offline : A customer can do KYC offline as well. However, it may take up to 7 days for the KYC to be approved by the KRA (KYC Registration Agency). You have to follow the steps mentioned below for doing KYC offline:

- Download and fill the KYC form
- Mention your Aadhaar/PAN details
- Visit a KRA office and submit the application
- Attach the proof of identity and proof of address with the application
- You may have to submit your biometrics as well in some cases
- You will get an application number which can be used to check the status of the KYC.

III: PROPOSED SYSTEM

E-KYC's main objective is to ensure that merchants in regulated industries have sufficient information to properly identify and verify a customer's identity in order to ensure they are not the victim of fraudulent activity or any money laundering activities.

The cost and prevalence of fraud for both businesses and consumers is simply too high to be ignored, and businesses need to ensure that they have the technology in place to safeguard them from fraudulent activities and keep their customers safe.

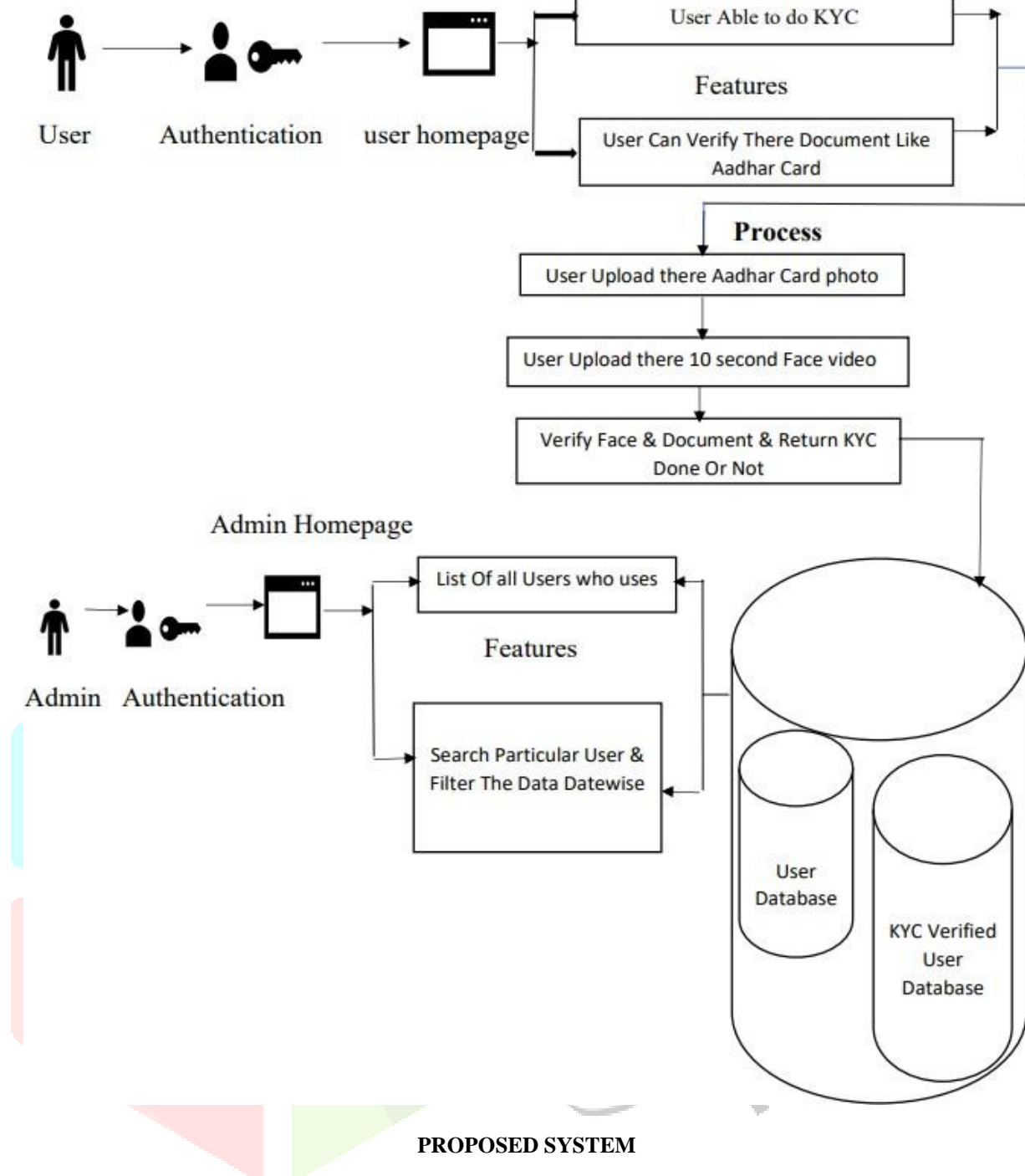
- Real time and instantaneous verification
- Fully compliant with regulatory requirements
- Faster processes

Following are the objectives of the mobile application:

- Scanning Credentials like PAN Aadhaar with the help of Optical Character Recognition.
- Uploading live 10 seconds video
- Implementing support for different sizes and formats of each of these credentials to prevent application failure.
- Identifying and collecting User Information using these credentials.
- Creating a database for of the information collected for each customer.
- Filling up customer details in forms demanding their information.

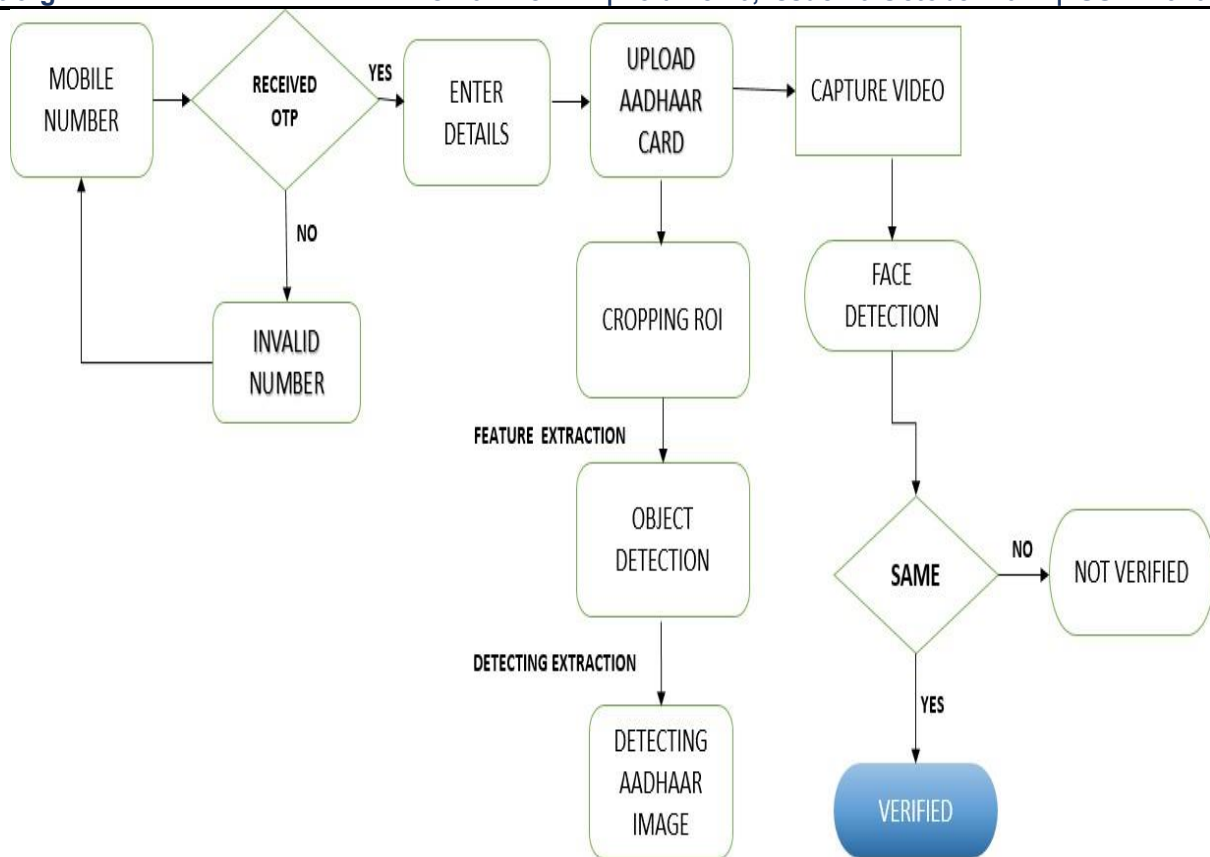
A few goals of this project are defined:

- Driving down cost of operations by detecting inefficiency in customer identification.
- Reducing risks of identity theft.
- By increasing customer satisfaction in a number of different functional operations across the institution.
- Improving overall quality of life of customers as well as verification officials



IV: WORKING

When the user opens the form of EKYC Verification, they have to fill some details about them like first name, last name and mobile number. User should also have a scanned copy of their Aadhaar card which they have to upload in the form. User should also have a working webcam which is to be used for live video recording and after capturing the video, they have to upload it as well. The technologies and algorithms used are Python (for programming), HTML & CSS for front-end, Haar-cascade and Deepface which contains the VGG Face model for face extraction, detection and verification. When the user uploads the live- video recording and aadhaar card, using haar-cascade algorithm we detect the face from the video and also extract the image from the adhaar card. Then we use Deep Face(library of python) which has the VGG-Face model to compare both the images and verify if both the images are of the same person. If both the images are same then the user gets a success message. As everything is done online and also instantly, the user doesn't have to go to the centres for getting their verification done. Also, with the help of Machine learning algorithms and techniques we can make sure that the verification is done properly with maximum correctness. So, there is also no need for another person (agent) to verify it personally.



BLOCK DIAGRAM

V: Literature Survey

KYC (Know Your Customer) is becoming a critical gatekeeper process for financial institutions, the world over, to safeguard against financial frauds, terrorist funding and money laundering. It involves collecting basic identity & address information about the customer. [1] One has to submit some documents to authenticate identity and address of the client/customer. The list of documents required is mentioned below:-

- Proof of Identity
- Proof of Address
- KYC process is and has been carried out in the following ways:-

2. KYC Offline : A customer can do KYC offline as well. However, it may take up to 7 days for the KYC to be approved by the KRA (KYC Registration Agency). You have to follow the steps mentioned below for doing KYC offline:

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3. KYC Online : Aadhaar OTP allows one to get the KYC done quite easily in minutes. You have to follow the steps mentioned below for doing KYC online:

- Visit the website of any KRA (KYC Registration Agency) or a fund House.
- Some of the KRAs are as follows – NDML, CAMS, Karvy, CVL and NSE
- Enter your details as mentioned in your Aadhaar card.
- Verify using the C where you have to enter the OTP sent to the mobile number registered with Aadhaar.
- Submit your application
- Once verified with UIDAI, the KRA approves your KYC.
- You can check the status of your KYC request by visiting the portal of the KRA using your PAN.