

Idea/Approach Details

Ministry/Organization name: Ministry Of Rural Development

Problem Statement: Automation mechanism for image capturing, processing, standardization, evaluation, classification , leading to better decision leading to better decision making results for various programs.

Team Name : The Ravens

Team Leader Name : Manish Choudhary

College Code : 1-3513406211

Idea Description

Idea :

The Idea is to build a web-application which have various portal for different Government programs, each portal have image capturing and different document uploading features. The validation and type defining of images are done by ML (Google Vision AI) , Deep Learning Algorithm (CNN).

Idea Description :

- A Hybrid web based application will be created.
- The application will have individual portal for every Government Programs.
- Each portal have access to features/tools like
 - Image Capturing tool with Geo tag.
 - Documents and Images Uploading Features

Idea Description (continue):

- The application automatically validate and define the type of images.
 - Object
 - Labels
 - Logos
 - Text
 - Properties
- Validation and types of information will show on portals.
- Technical Approach :
 - Image Classification / ML Process : Google Vision AI/CNN Algorithm
 - Geo-Tag (Location Identification) : Geotagger python framework
 - OCR (Documents OCR Process) : Tesseract python framework

SOLUTION

- As our idea is describe in previous slide, that we make a platform which will works as a bridge to fulfill the gaps between digital and physical workflows. With newly found encouragement to be creative, people are finding new ways to deal with the current reality.
- Even though the construction industry has traditionally been slow to adopt the new technology, our current reality means we are leaning on it more than ever to be efficient and remain productive.
- It will be also helpful for Municipalities to updating their process for permit application and e-procurement to accommodate new technology.

SOLUTION continued..

- Through this platform we can capture more data in the field, the more information can be shared with the team members who are currently not on sites. The daily reporting of tasks completed in the field becomes key.
- And if an inspector don't need to be on-site, it can be challenge to get timely information to make important decisions. So through this platform the inspector can also check the images validation.

POST INSPECTION WORKFLOW :

As after an inspection, electronics records help make it all happen.

- When inspection notes are digital and added to working plans , there is no delay waiting for a report from an inspector. They're immediately available to act on.
- As it is a cloud based platform, which means all photos and annotations with labels, OCR and image size can remain permanently within the job file. They are also within the context of the sites progress so the end user can see what happened on the work after the inspection.
- This platform will be deals with balancing efficiency with regulations which means the contractors, municipalities and the public are confident with the outcomes.

Details attached with Uploaded Media

- ✓ IP
- ✓ City
- ✓ Region
- ✓ Country
- ✓ Location
 - ✓ Latitude & Longitude
- ✓ Postal/zip code

□ Used For Identity and Fraud Detection.

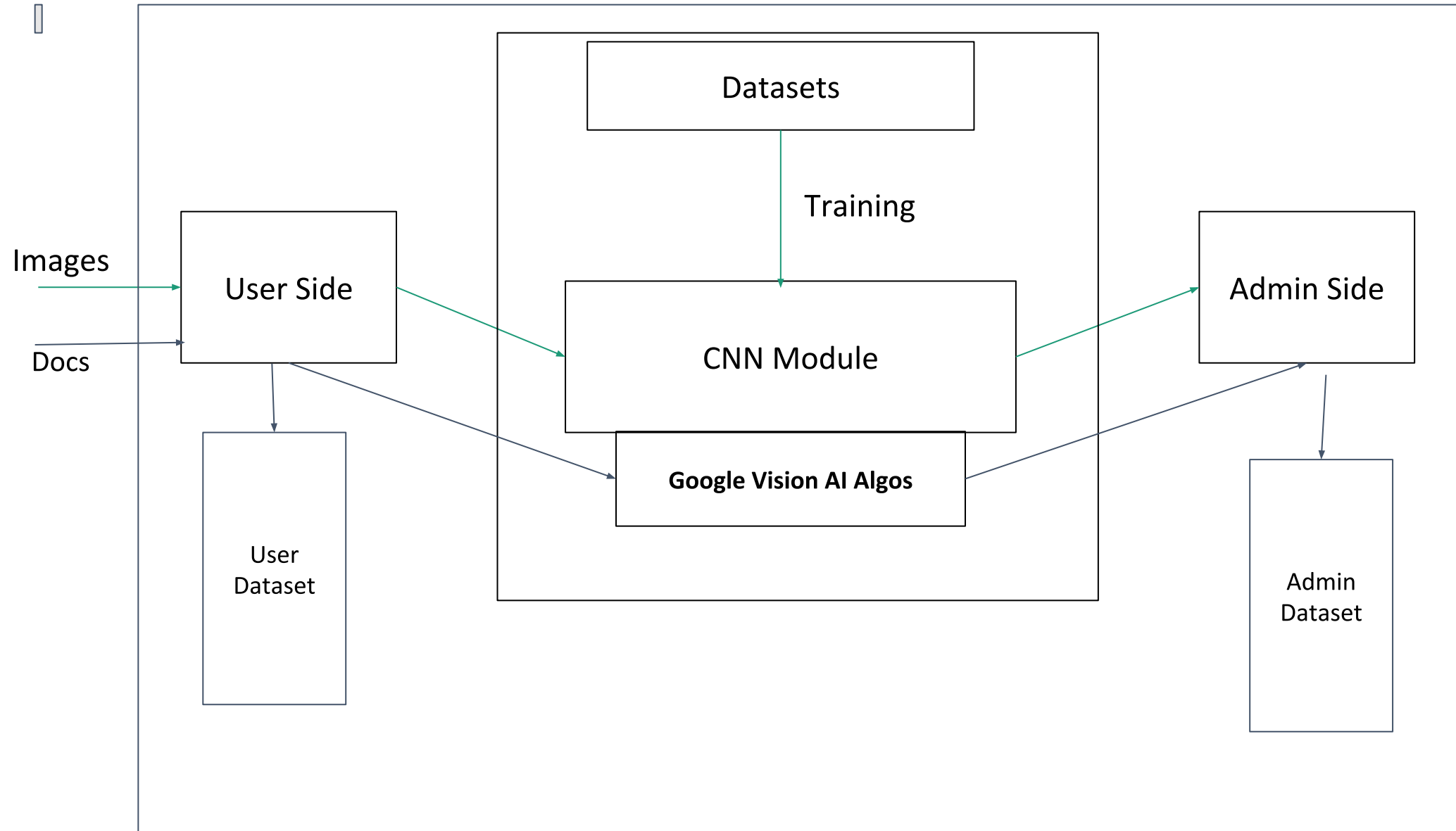
1. Structured Formatted OCR Text Extraction

- Text Extracted From Images/Pdfs under any Scheme will be stored as structured format like data frame or in excel or csv format.
- And this will be used at Admin side for validating the Employment Identity or details.

2. Images Compression

- High Resolution Compression (Slow Processing)
 - Using ML Algorithm
- Low Level Compression (Fast Processing)
 - Simple PIL method

Idea Description (continue):



Technology Stack :



Programming Languages :

- JavaScript
- HTML5
- CSS 3

JavaScript Framework :

- Angular
- JQuery

CSS Framework :

- Bootstrap

(Hybrid App)



BACKEND

Programming Languages :

- Python

Python Framework :

- Flask

✓ Image Processing –

- OpenCV Python
- Google Vision AI
- CNN

OCR and Geo-Tag Python :

- Tesseract OCR and Geotagger

Select Scheme

Select Scheme



Upload Images

Choose file

 CHOOSE IMAGE

Upload

PDF

Upload DOCs AS PDF

OCR - Extract TEXT

Upload

PDF

Upload DOCs AS PDF

OCR - Extract TEXT



Select Image From Database

Client/User Side



No Image/PDF selected

Select Scheme

Select Scheme

Select Scheme

PMAYG

MGNREGA

DDUGKY

PMGSY

RURBAN

Upload Images

Choose file

 CHOOSE IMAGE

Upload

PDF

Upload DOCs AS PDF

OCR - Extract TEXT

Client/User Side



Upload Images

Choose file

 CHOOSE IMAGE



Upload

Upload

PDF

Upload DOCs AS PDF

OCR - Extract TEXT



Select Image From Database

Labels

Objets

OCR



Similar Images

Duplicates found!!


Duplicate Images

Delete



Client/User Side

Admin Side - Inspectors

User Name	Files	City	Region	Country	Postal Code	IP Address
User Identity		Alwar	Rajasthan	IN	301001	117.242.101.46

Admin Side - Inspectors

Labels

Objets

OCR



Similar Images

Client Side - Users

Ministry of Rural Development

PDF

Upload DOCs AS PDF

OCR - Extract TEXT

Choose File anish_admit.pdf

Upload

Select PDF From Database



OCR - Extract TEXT

Choose File No file chosen

Upload

Select PDF From Database

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http://icnetrecruit.in/intmmaug19/cloca_jan19/process.php?appid=a0163...



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ADMIT CARD
Artificer Apprentice & Senior Secondary Recruit
Aug 2020 BATCH

Application No. : SSA208200308756
Roll No. : 4803053
Note: Please note this Roll No. for login in the computer at the exam centre

Seat Identification
Number: 245311



Barcode of Application Number.

CANDIDATE NAME : ANEESH CHOUDHARY
DATE OF BIRTH: 02-06-2003
FATHER'S NAME/ MOTHER'S NAME : RAMPRAKASH CHOUDHARY/-
ADDRESS : VJAY NAGAR COLONY DESULA MIA VJAY NAGAR COLONY DESULA MIA




Paste your
signature

Admin Side - Inspectors


Ministry of Rural Development

ARTIFICER APPRENTICE & SENIOR SECONDARY RECRUIT http://icnetrecruit.in/intmmaug19/cloea_jan19/process.php?appid=a0163...





सत्यमेव जयते

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OCR TEXT in PDF :

ARTIFICER APPRENTICE & SENIOR SECONDARY RECRUIT http://icnetrecruit.in/intmmaug19/cloea_jan19/process.php?appid=a0163.. JOIN INDIAN NAVY wi i
ADMIT CARD Artificer Arprentice & Senior Secondary Recruit Aug 2020 BATCH Seat identification Number: 245311 Application No.: SSA208200308756 Roll
No.: 4800053 Note: Please note this Roll No. for login in the computer at the exam centre Barcode of Application Number. CANDIDATE NAME: ANEESH
CHOUDHARY DATE OF BIRTH02-06-2003 FATHER'S NAME MOTHER'S NAME : RAMPRAKASH CHOUDHARY ADDRESS: VLIAY NAGAR COLONY DESULA MA
VIJAY NAGAR Paste your coloured COLONY DESULA MIA ALWAR RAJASTHAN 301000 photograph here. सराफे Government ID type : AADHAR Candidate

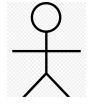
Admin Side - Inspectors

Tables in PDF :

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1	-- G\nCANDIDATE NAME : ANEESH CHOUDHARY\nDATE OF BIRTH:02-06-2003\nFATHER'S NAME/ MOTHER'S NAME : RAMPRAKASH CHOUDHARY/-\nADDRESS : VIJAY NAGAR COLONY DESULA MIA VIJAY NAGAR\nCOLONY DESULA MIA\nALWAR,RAJASTHAN\n301030\novernment ID type : AADHAR\nGovernment ID : -\nAddress of Online Examination Centre\nOnline Examination Centre Code:MONM6W\nOnline Examination City:JAIPUR\nOnline Examination State:RAJASTHAN				Paste your\ncoloured\nphotograph here.		
2							
3							
4					Candidate Signature		

	0	1	2	3	4	5	6	7	8
0	JOIN INDIAN NAVY\nADMIT CARD\nArtificer Apprentice & Senior Secondary Recruit\nAug 2020 BATCH								
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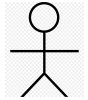
Use Cases :



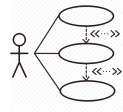
Actors



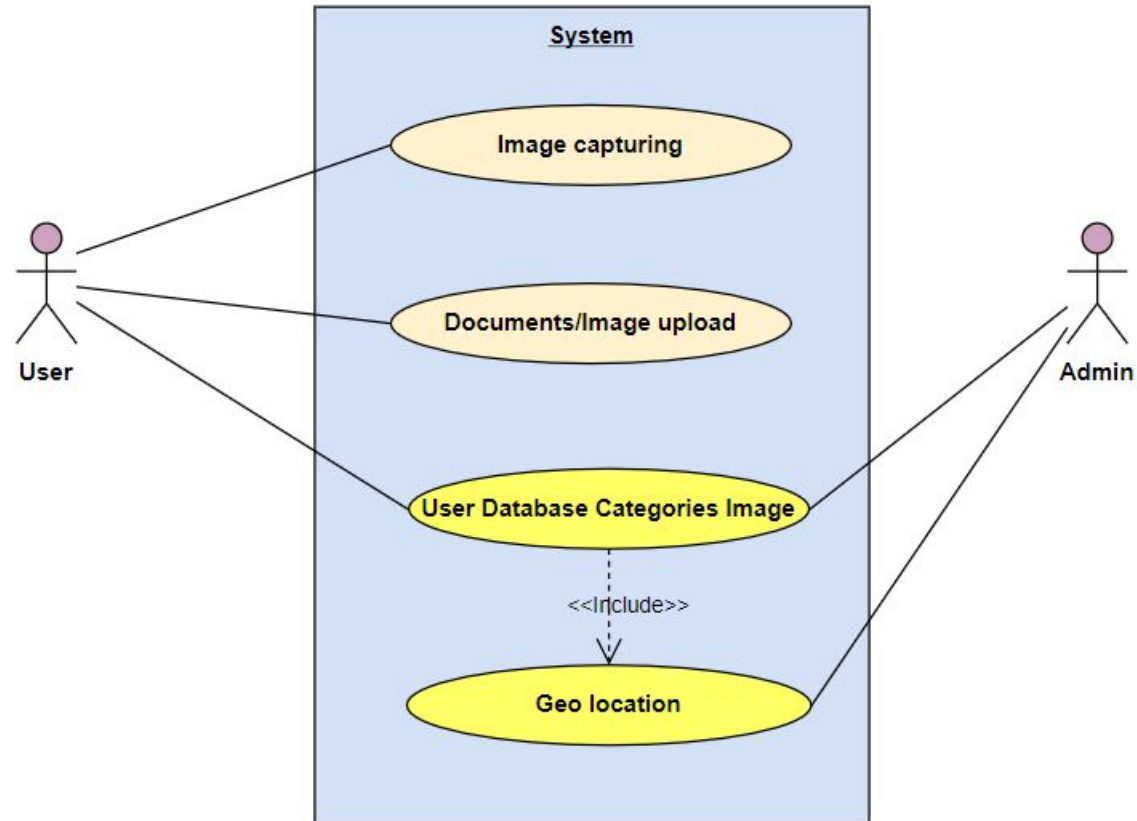
User : user who will upload Documents and Images and capture Images through Camera.



Admin : User who can see manually all uploaded data and verification details.



Use case Diagram



Dependencies:

CLIENT SIDE

- Mobile or Computer Device
- Web-Browser or Mobile App
- Internet

SERVER SIDE

- Large Scale Database
- Cloud Storage