



Centre of Excellence in Artificial Intelligence (COE-AI), was inaugurated by Honorable Minister of Electronics & Information Technology, Shri Ravi Shankar Prasad in National Informatics Centre (NIC) Headquarters, on 10th January 2019.



Artificial Intelligence Powering Governance

Centre of Excellence in Artificial Intelligence @ NIC

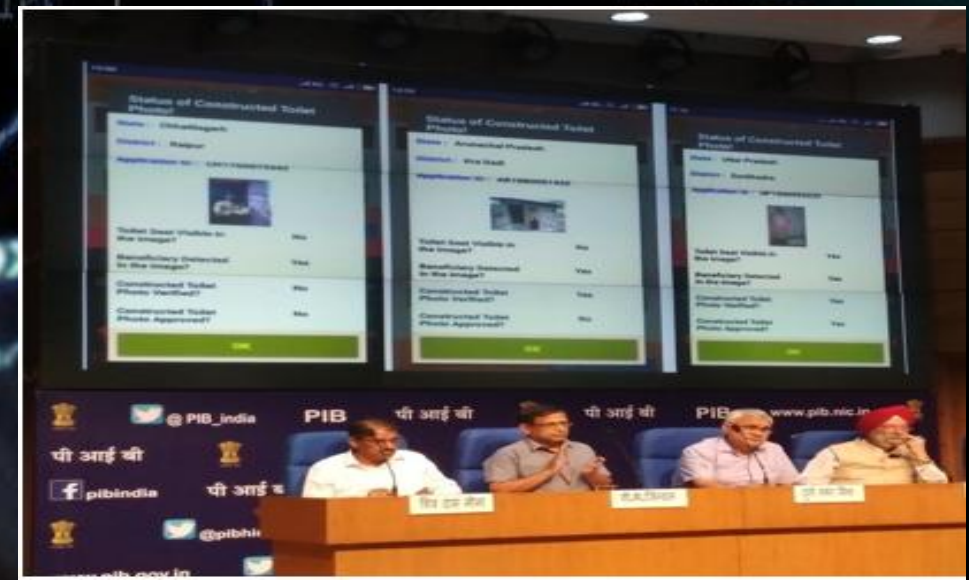
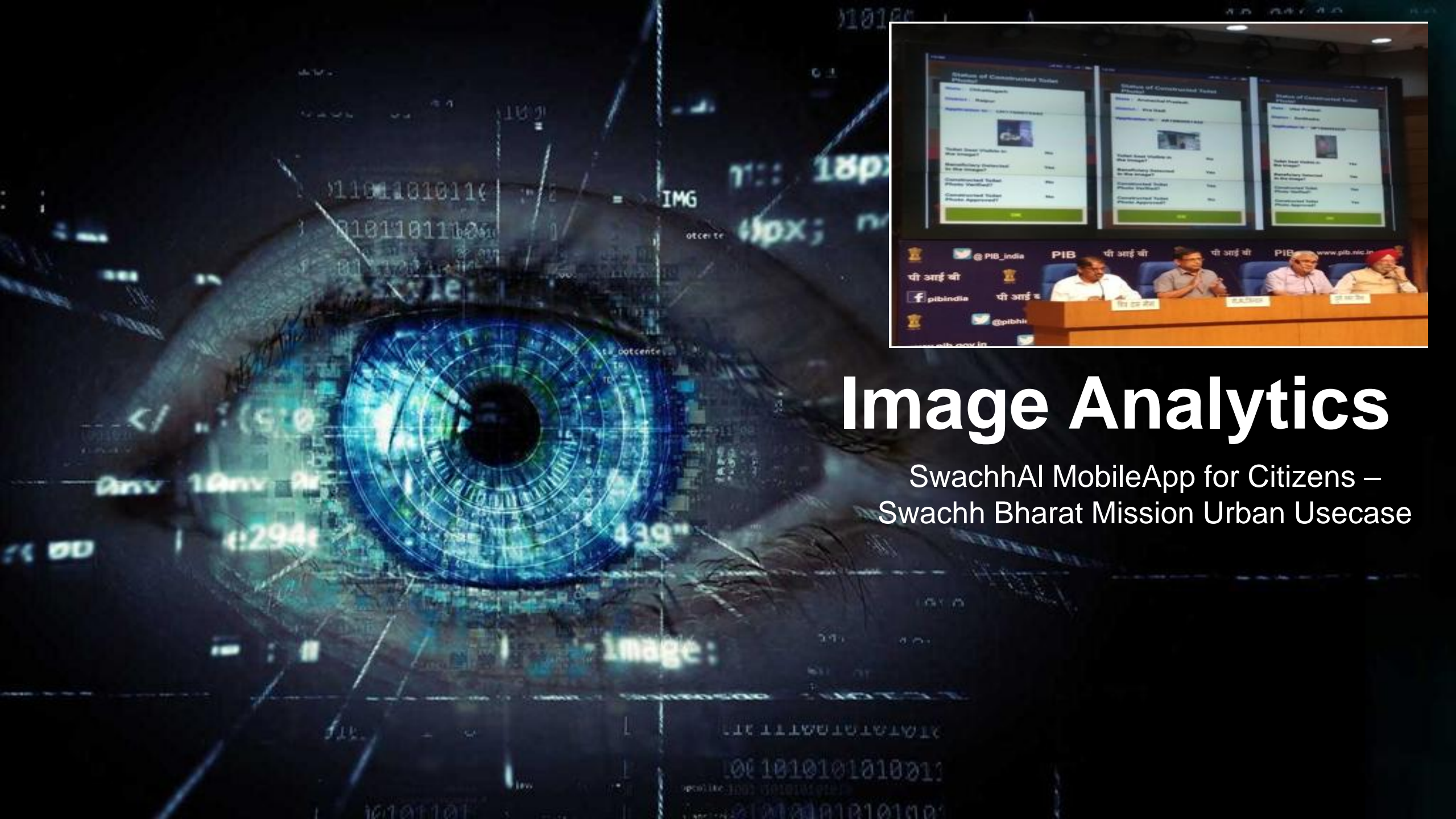


Image Analytics

SwachhAI MobileApp for Citizens –
Swachh Bharat Mission Urban Usecase



Governance Issues

01 Delay

Beneficiaries find delays in Scheme Benefit Transfer

02 Corruption

Benefit not given to genuine applicants

03 Fraud

Fraudsters milk the scheme by duplicate applications

04 Efficacy

What was the efficacy of implementation of the scheme

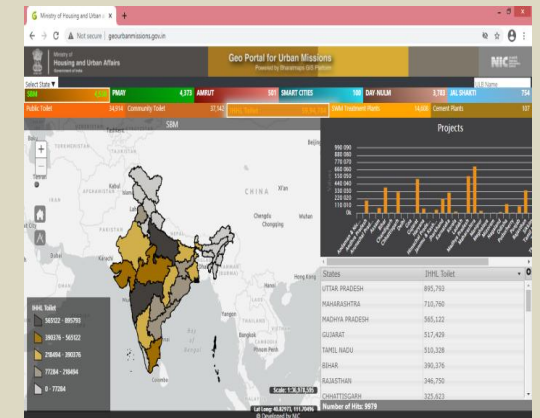
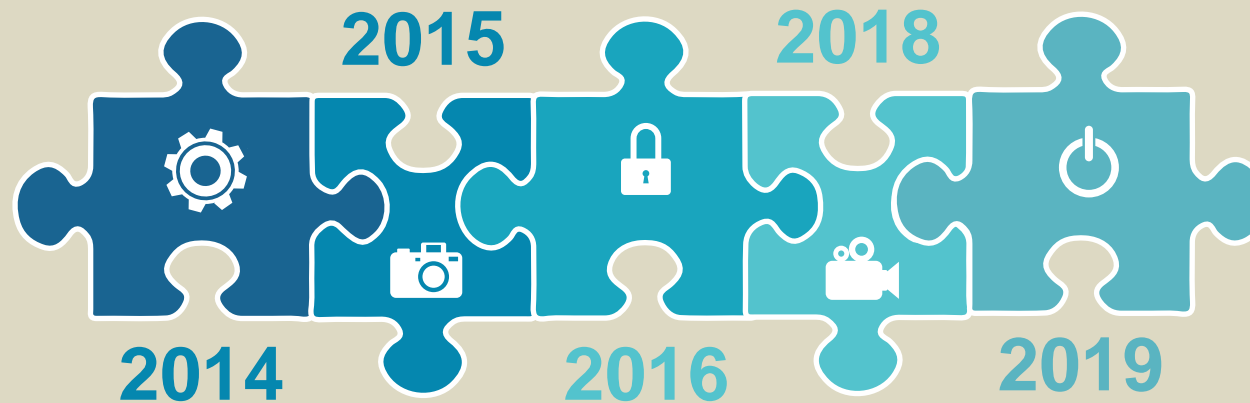
Swachh Bharat Mission - UseCase

Individual Household Latrine (IHHL) Scheme

Single Instance Multi Tenancy Application for Centre, States, Urban Local Bodies & Citizens to Interact on same platform

Individual Household Latrine (IHHL) Scheme

Creation of GeoUrbanMission site showing all SBM Component created assets on Bharat Maps



Individual Household Latrine (IHHL) Scheme

Creation of SBM Urban Mission Mode Project & Mission Component - Individual Household Toilet Scheme for Toilet Construction by Citizens

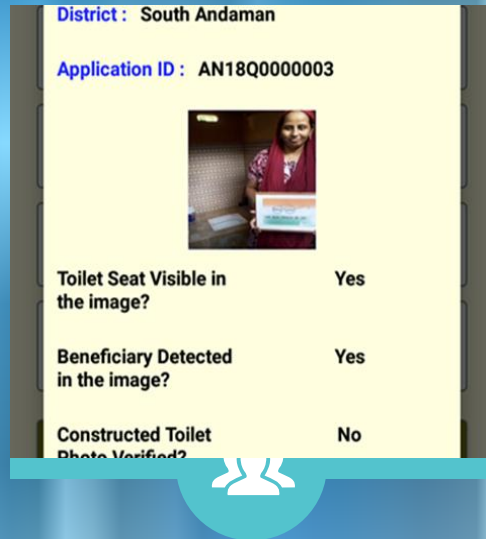
Individual Household Latrine (IHHL) Scheme

Upload of Geo tagged Constructed Toilet Photos by Citizens & SBM dashboard drilldown available to public to bring transparency.

IHHL Scheme

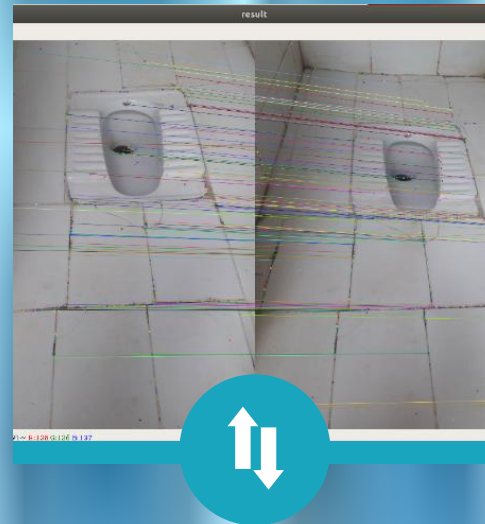
Creation of SwachhAI Mobileapp with Intelligence Augmentation for automatic detection of Beneficiary & Toiletseats for citizens

Advantages of using Image Analytics



Reduction of Workflow Cycle for getting Scheme Benefits

SwachhAI Mobileapp Status alerted citizens to incorrect photo upload and helped in correct uploads



Identification of duplicate photo uploads in Scheme

This AI Model also helped detect Similar Image uploads of Constructed Toilet Photos in Swachh Bharat Mission Rural Scheme



Children Attendance

Headcount of children in classrooms for ICDS Scheme, PENCIL Scheme etc..



Contactless Office Attendance

Face Verification can be used Life Certificate for Pensioners, for Missing child tracking & other schemes across age

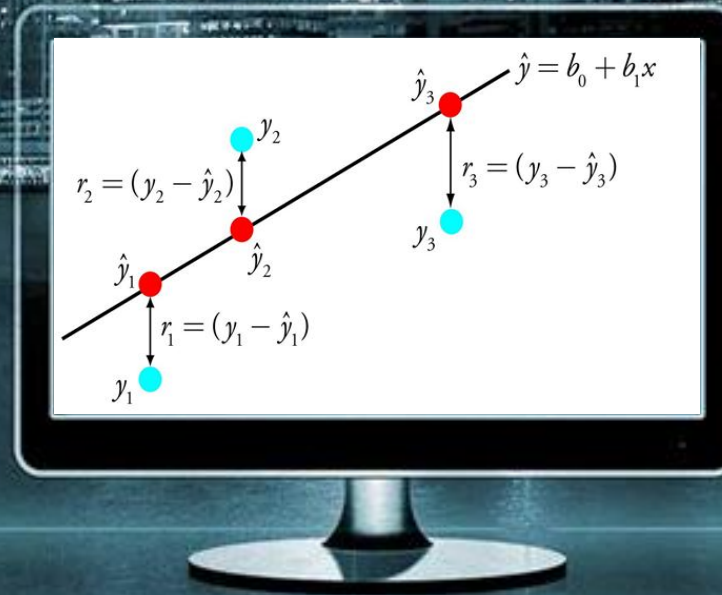
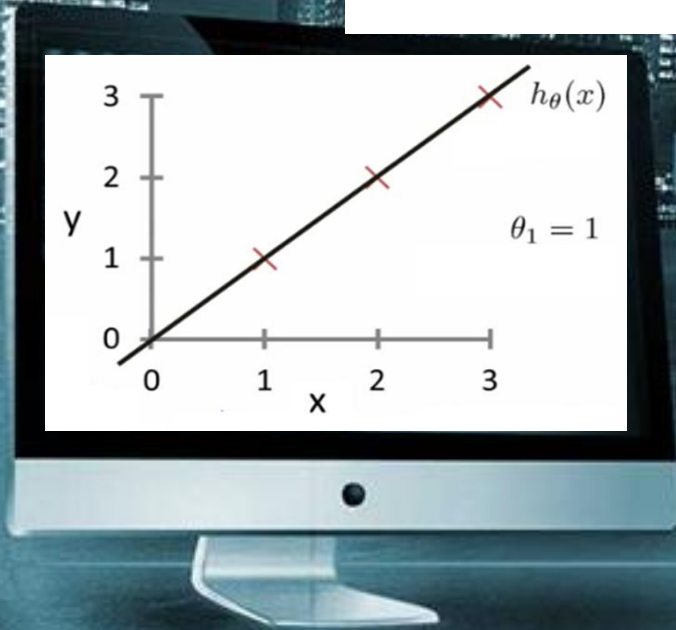
Standard Machine Learning Algorithms

- Machine learning algorithms are described as learning a target function (f) that best maps input variables (X) to an output variable (Y): $Y = f(X)$
- This is a general learning task where we would like to make predictions in the future (Y) given new examples of input variables (X)

Top Machine Learning Algorithms are

- ✓ Linear Regression
- ✓ Logistic Regression & Linear Discriminant Analysis
- ✓ Decision & Regression Trees
- ✓ Naive Bayes
- ✓ k-Nearest Neighbor & Learning Vector Quantization
- ✓ Support vector machine
- ✓ Bagging & Random Forest
- ✓ Boosting & AdaBoost
- ✓ Markov

21



$Y = \theta_0 + \theta_1 X$ is called the hypothesis we predict y given the input x and the goal of the learning algorithm is to find the values for the coefficients θ_0 and θ_1 such that Residual errors of the dataset points and line of best fit is minimized

Text Analytics

Details

Details*

arose out of an application u/s 166 of the M.V. Act on account of Kanai Ghosh in motor accident. Briefly stated, the case of the is that, on 01.12.16 at about 8.00 P.M(night) Kanai Ghosh (ed) was proceeding towards Tarapur through Khalseuli to ur Road under Jhargram P.S by walking keeping himself in the of the road at that time near Tarapur More the offending Motor bearing no. WB-34D/8720 came from opposite side and in a rash nent manner dashed the deceased. As a result victim sustained injuries all over his body and with the help of local people, he an to Midnapore Medical College & Hospital and after treatment

Showing 1 to 5 of 10 entries

filename	victim's age (years)	death	6000
westbengal/burdsjdb/202100015512014_1	50	death	6000
Loss of dependency/Loss of Earnings(Past,Present & Future)(₹)		643500	Citations
Hospital, Medical and other incidental expenses (₹)		NA	• United India Insurance Company Ltd =Vs.= Shilp 509
Compensation(₹)		713500	• Cooke vs. Gill [reported in (1873) 8 CP 107
Interest Awarded (%)		7	• [Alchemist Ltd. & anr. vs. State Bank of 21)
			• Navinchandra N Majithia vs. State 2007) 7 SCC 640
westbengal/burdsjdb/202100017082014_1	49	death	8500
Loss of dependency/Loss of Earnings(Past,Present & Future)(₹)		1147250	Citations
Hospital, Medical and other incidental expenses (₹)		NA	• United India Insurance Company Ltd =Vs.= Shilp 509
Compensation(₹)		1217250	• Cooke vs. Gill [reported in (1873) 8 CP 107
Interest Awarded (%)		7	• [Alchemist Ltd. & anr. vs. State Bank of 21)
			• Navinchandra N Majithia vs. State 2007) 7 SCC 640
bihar/punj/210600006842013_1	48		
Loss of dependency/Loss of Earnings(Past,Present & Future)(₹)			
Hospital, Medical and other incidental expenses (₹)			
Compensation(₹)			
Interest Awarded (%)			
bihar/punj/210600000372016_1			
Loss of dependency/Loss of Earnings(Past,Present & Future)(₹)			
Hospital, Medical and other incidental expenses (₹)			
Compensation(₹)			
Interest Awarded (%)			

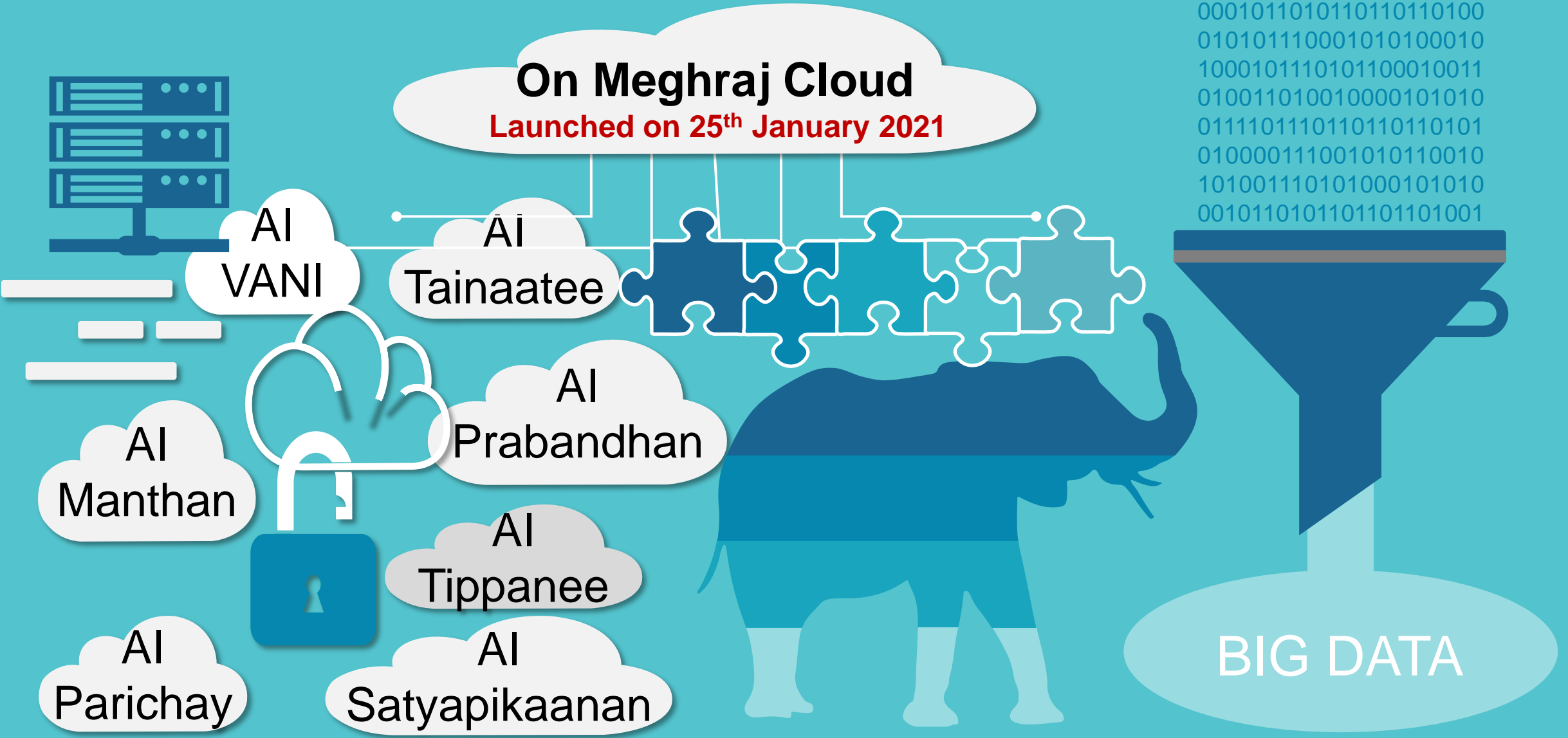
“

NIC has developed & been working with eCourts team to integrate AI assisted search for similar cases. It has been tried out for Motor Accident Claim Petitions (MACP cases). It searches out similar cases based on the content of the petition.

”

Assisting Lower Judiciary through Cognitive Search

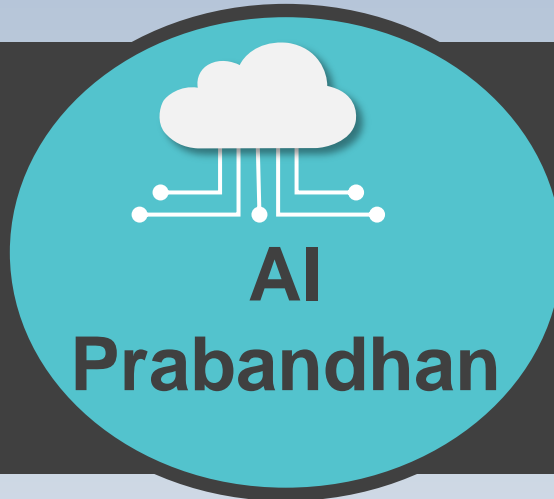
AlaaS – Artificial Intelligence as a Service



AlaaS – AI Platform Services

AI Manthan

Build, Train & Test Custom AI Models



AI Prabandhan

Model Retraining, Backup & Restore, Scaling, Business Continuity Planning & Disaster Recovery



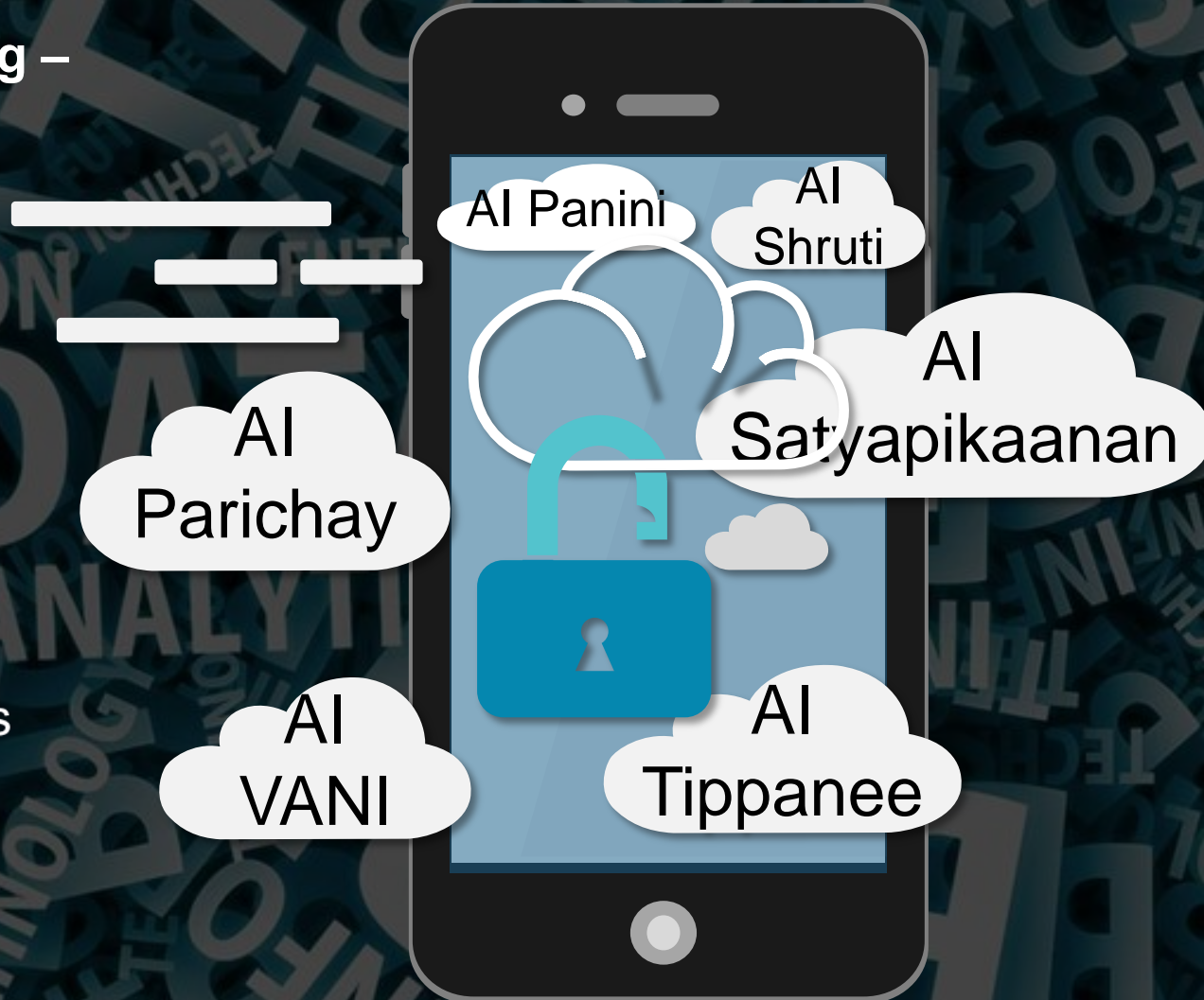
AI Tainaatee

Deploy AI Models Built

AlaaS - AI Product Services

User does not need to apply AI Model Building –
Access Built Models through APIs.

- 01 AI VANI**
Chatbot & Voice Support Services
- 02 AI Satyapikaanan**
Face Verification Services
- 03 AI Panini**
Indic languages Text Translation Services
- 04 AI Parichay**
Personally Identifiable Information Services
- 05 AI Shruti**
AI Voice to Text Services
- 06 AI Tippaneer**
AI Tools Services for Annotating Data



AI Satyapikaanan – Face Verification

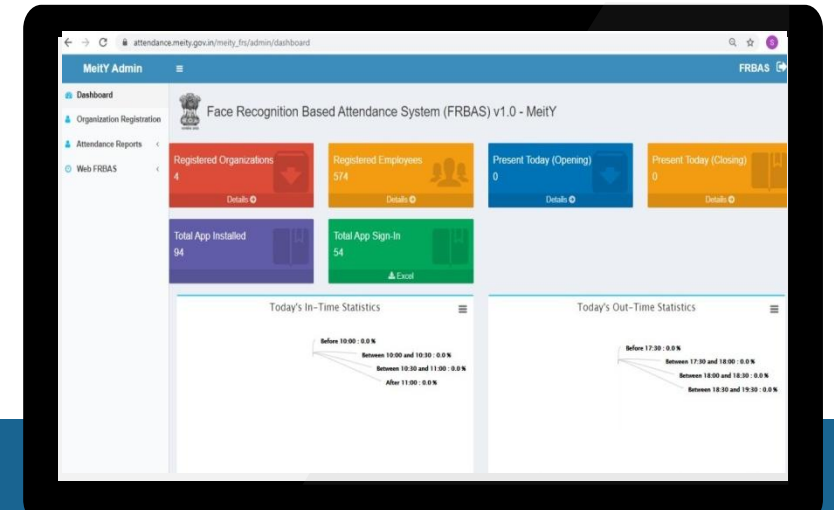


mPension Manipur -
Face Verification Based
Mobileapp for Life
Certificate for
Pensioners.



RTO Driving license

Face Verification API being
integrated for Driving / Learners
License applicant verification



FRBAS - Face Recognition Based
mobile Attendance System



SBM Urban

For Applicant & Beneficiary in
Toilet photo face verification

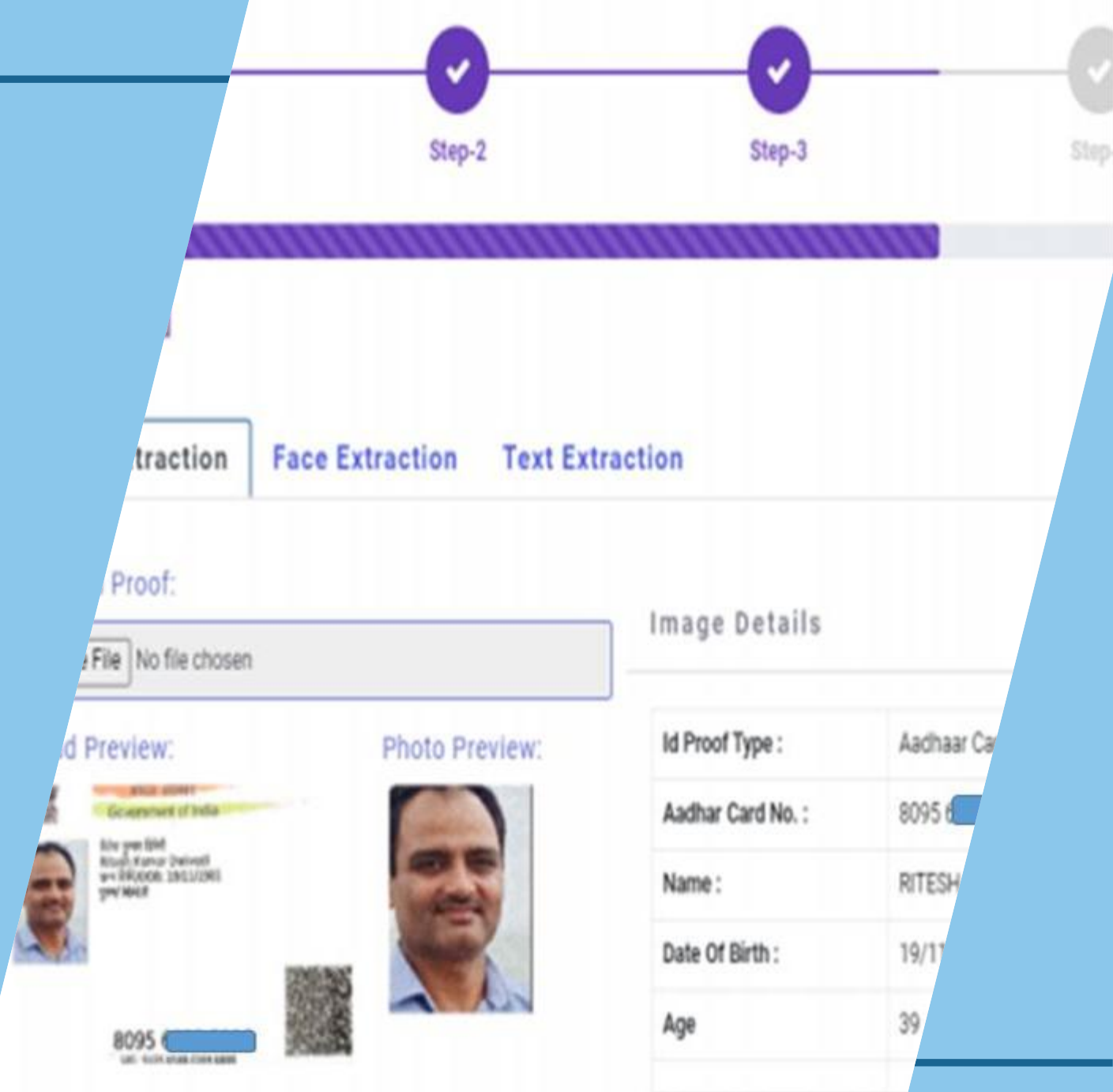


AI Parichay - Personally Identifiable Information

Match ID proof with
Form Contents

Available as a Service

Text Extraction from ID proofs
and matching with Applicants
Details automatically



AI VANI Conversational AI - Building Citizen Government Communication

20 Chatbots

- Websites Energised –
- RTO Driving License Queries
 - CONFONET Consumer Case
 - Meghalaya Covid19
 - OJAS & iKhedut Gujarat
 - eWay Bill etc...

One Engine Inhouse

Bringing All Central Govt. Departments/ States etc.. On Common Platform and Single AI Model

8 Voicebots

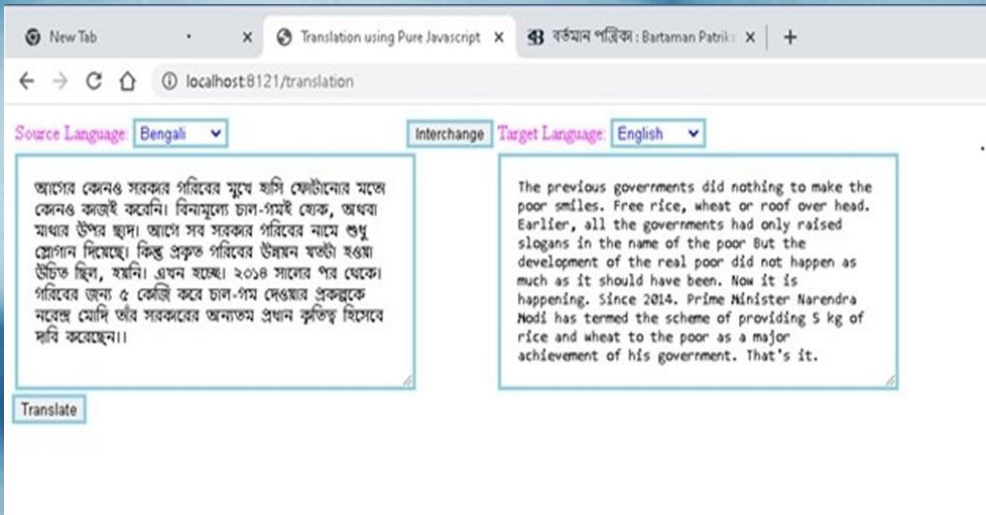
- PM Kisan Samman Nidhi Yojana Bilingual Voice Support
- Kailash Mansarovar Yatra,
- IVFRT, CONFONET etc..

Vaidya Vani

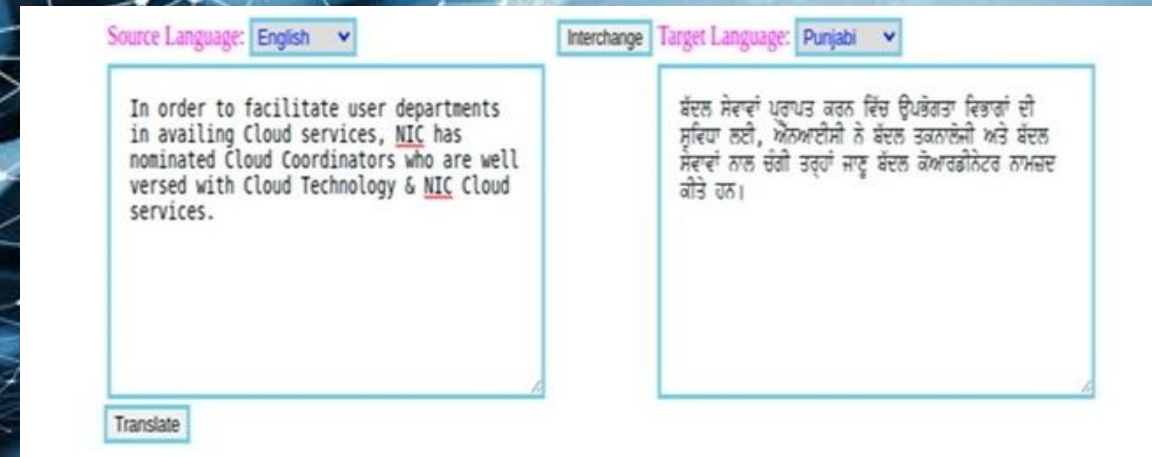
First AI enabled vOPD services for patients over Basic Telephony

Bodhir Sarathi

Speech to Text to Sign Language - Hindi / Assamese Alphabets & words - for Speech & Hearing Impaired Students



AI Panini – Facilitating Written Communication



Specify AI- ASR Service Requirement

ASR (Automatic Speech Recognition) is all about using computers to transform the spoken word into the written one. ASR is a subfield of Artificial Intelligence (AI) in which a computer recognizes spoken words and transforms them into text. The process is also commonly referred to as "speech-to-text" or Transcription Services. The process can be applied to live speech or audio recordings. In short, ASR is the technology that makes it possible to dictate texts into your application for voice inputs.

This service may be needed for eFile noting to be dictated and transcribing to text or translating to another language, eg. A note maybe dictated in English and eFile noting written in Hindi or vice versa, filing APAR, during video conferencing , IVRS based systems, filing user form, VOICEBOTS etc.

Department / Ministry using NIC Cloud VM can request for ASR by filling ASR Service request form on MeghRaj Cloud of NIC and briefly describe the use case. The User need to include user request letter and has to select language for ASR input voice. If user requires translation with ASR, then user has to provide translation language as well.

ASR SERVICE FORM

Transcription Service Request

ASR Language

 English
 Hindi

Translation Service Request

Translation Language

 English-> Hindi
 Hindi-> English

Upload User Signed Request

Choose file AI_document.pdf

Use Case Description

SUBMIT

**AI Shruti – You Speak
I listen & write it down for you**