

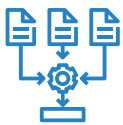
Empowering Governance with Advanced AI Capabilities



The National Informatics Centre (NIC) has cultivated a robust in-house talent pool proficient in a broad spectrum of Artificial Intelligence (AI) technologies. This expertise spans foundational soft computing, conventional Machine Learning (ML), and Deep Learning (DL) methodologies, alongside cutting-edge advancements in Generative AI (GenAI). NIC focuses on much more beyond the development and deployment of AI solutions for governance; it also encompasses robust frameworks to regulate AI usage, ensuring adherence to ethical, moral, and legal standards. By leveraging open-source tools and proprietary guardrail solutions, NIC ensures responsible and transparent AI implementation, setting benchmarks for trustworthy AI governance in public systems.

AI Workforce

Skilled human capital of NIC is well-equipped to develop and deploy AI-driven solutions across diverse domains, with capabilities in the following areas:



SLM (Small Language Model)

Efficient models for specific tasks and domains.



LLM (Large Language Model)

Advanced implementations like LLaMA for extensive language understanding and generation.



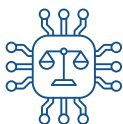
VLM (Vision Language Model)

Integration of vision and text modalities for enhanced comprehension and analytics.



Object Detection using YOLO

Real-time object detection for various applications.



Guardrails

Development of ethical AI frameworks for secure and responsible deployment.



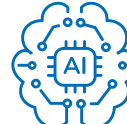
Model Context Protocol (MCP)

Standardizes how LLMs connect and share data with external tools, services, and data sources.



NLP (Natural Language Processing)

Expertise in text extraction, summarization, and gap-filling for data-driven decision-making.



Agentic AI & AI Agents Dev

Building AI that doesn't just think, but acts with purpose using AutoGen, LangChain, LangGraph & LangSmith.



CNN (Convolutional Neural Networks) from Scratch

Specialized visual data processing for pattern recognition and analysis.



DNN (Deep Neural Networks) from Scratch

Tailored deep learning models for niche problem-solving.

This comprehensive expertise positions NIC as a leader in harnessing AI for governance, ensuring sustainable, transparent, and impactful digital transformation initiatives.

AI powered Real-life Projects & PoCs developed by NIC Odisha



An AI-powered mobile app for automated and geo-fenced meter reading using OCR, YOLO-based recognition, and vision-language anomaly detection.

The system enables detection and reading for both digital and analog meters, with the capability to accurately determine the decimal point position directly from the meter display.



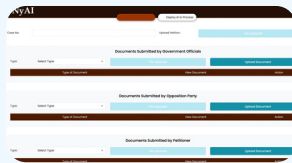
PUCC system

AI-powered PUCC system integrates CNN-based anti-spoofing, YOLOv8+OCR number plate recognition, and YOLOv8 vehicle classification to ensure real-time, tamper-proof, and highly accurate certification.



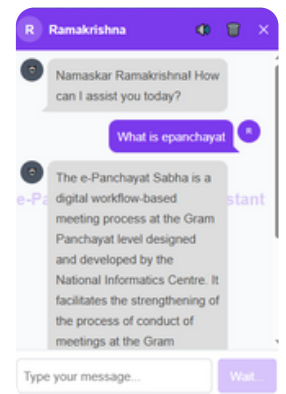
CCMS (Court Case Monitoring System)

NyAI -A PoC AI-powered legal document processing system for land-related court cases using LLM with RAG to augment petition analysis and judgment drafting.



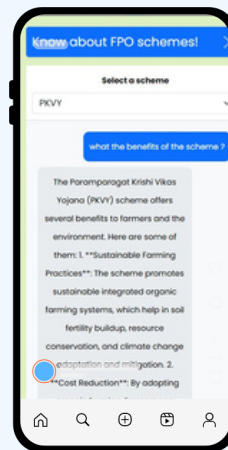
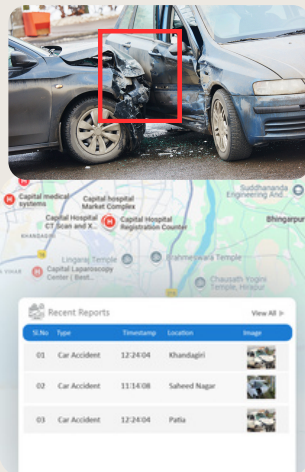
PANCHAYAT SABHA

e-Panchayat Sabha- AI Query Resolution System for e-Panchayat Sabha using Mixtral 8x7B with Myllbus (Vector DB + RAG), enabling context-aware conversational query resolution from manuals, FAQs, and past experience.



Billion Eye

Billion-EYE- An AI-powered zero-UI incident reporting system using computer vision for automatic detection of incident type, location, responsible authority, and deduplication of reports.



FPO ODISHA

Powered by RAG with Mixtral 8x7B LLM and Vector DB, enabling conversational AI for scheme-specific queries on the FPO Odisha Portal .



AI-as-a-Service on Megharaj

MeghRaj CLOUD INITIATIVE
NATIONAL CLOUD BY NIC



AI SATYAPIKAANAN

Put simply, face verification is needed to verify that you are who you claim to be.



AI - VANI

Conversational AI in the form of virtual assistants, chatbots, and voicebots has gained popularity as it can be used to automate the task of answering user queries that are repetitive in nature.



AI - PANINI

Text Translation API based Services is about using Neural Machine Translation (NMT) to transform the text from one language into another.



SHRUTI

Automatic Speech Recognition (ASR) is all about using computers to transform the spoken word into a written one.



AI-SARANSH

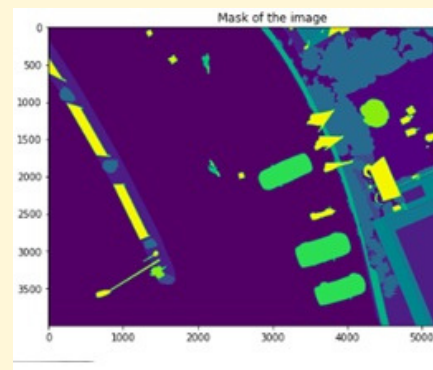
It is a technique that shortens a long piece of content with main points outlined that gives an idea of the whole content.



AI VIHANGAM DRISHTI

Geo Spatial Image Analytics - Drone Image Semantic Segmentation to improve location-based services, vandalism detection, road map connectivity, predicting the boundaries of land parcels based on common property boundary features (for example, a lack of vegetation, the existence of a fence or a path, etc.)

API based services facilitated over Meghraj Cloud of NIC for Ministry of Panchayati Raj for identifying concrete rooftop areas in houses for solar panels installation in villages.



AI NIBHRIT

AI based solution developed by NIC for masking of Personally Identifiable Information such as PAN , Aadhaar & Fingerprints in pdf documents facilitated for fraud prevention, implemented in Registration Department pan India by Department of Land Resources for public copies of sale deeds.



AI ANVESHKA

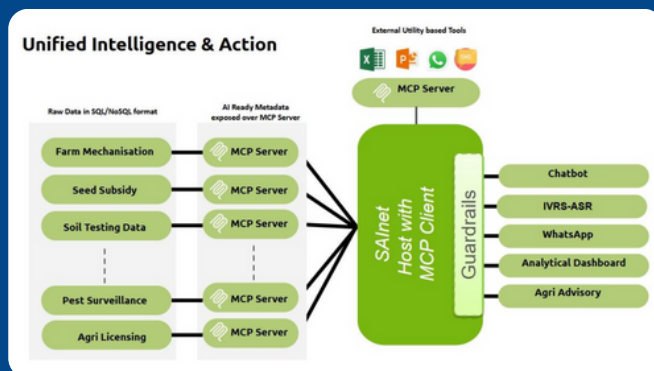
'Anveshika' is a Generative AI as a Service. This service has currently been facilitated to judiciary and they have developed a legal research assistant tool using this service. This is a service for searching of domain specific documents and generation of response for the user query in English using RAG (Retrieval Augmented Generator framework).



Smart Agriculture Intelligence Network (SAINet)

A Digital Bridge Between Data and Decisions in Farming using the power of Gen-AI

NIC Odisha has undertaken a sponsored project to transform SQL-ready data into AI-ready data, seamlessly integrated through the MCP framework for LLM compatibility. The initiative incorporates Guardrails for perimeter security and Retrieval-Augmented Generation (RAG) to achieve scalability, reliability, and secure data handling within MCP.



AI powered Proctored & Face recognition based Learner's License (LL) examination

NIC developed an AI-powered face authentication system integrated with liveness detection for the Sarathi platform. This system allows for real-time, secure digital identity verification, significantly improving the reliability of the LL issuance process.

The AI engine combines spoof detection, eye blink detection, smile detection, and distance verification using Advanced pre-trained AI models for face and eye tracking & a custom Convolutional Neural Network (CNN) for spoof detection.

The system has been successfully deployed in 14 states: Karnataka, J&K, Punjab, Chhattisgarh, Maharashtra, Uttar Pradesh, Odisha, Sikkim, Goa, West Bengal, Delhi, Bihar, Assam, and Himachal Pradesh. Impact in Odisha (eKYC Mode Usage Statistics)

Period	Total Applications	Pass %	Fail %
Basic Authentication (01/01/24 - 18/10/24)	139,668	95%	5%
AI Authentication (19/10/24 - 01/04/25)	71,773	86%	14%

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