

UTTARAN

National Informatics Centre West Bengal :: Newsletter



"Anyone who has never made a mistake has never tried anything new" - Albert Einstein



Message from the State Informatics Officer



I am elated to witness that the conceptualization has come to reality. It is the idea to publish a newsletter "UTTARAN" for NIC West Bengal commencing from January 2022. Kudos are reserved for the editorial board members for their commitment and dedication and also for the persons who meaningfully contributed towards its accomplishment.

It is believed that with ever-increasing ICT and e-Governance activities persuading the socio-economic developments in the state of West Bengal, this newsletter would be prudent to disseminate relevant knowledge and information to the Government establishments and society-at-large.

"UTTARAN" shall present various events, attainments, accolades and issues related to ICT projects implemented mainly in the State of West Bengal.

With the increased demand for intricate and large digital solutions in the multifaceted arena of e-Governance, NIC is enthusiastic not only to explore more challenges and opportunities in the fields of emerging technologies but also to deliver efficient and prolific e-Governance services to the stakeholders.

Being a part of an enormous organization like NIC, I sincerely hope that "UTTARAN" will further bolster our bonding with the Government.

Dr Saibal Sarkar, DDG & SIO NIC WB

Message from the Chief Secretary, GoWB



It gives me immense pleasure to know that NIC West Bengal is publishing a quarterly newsletter UTTARAN in January, 2022 to highlight the e-Governance initiatives in West Bengal.

NIC West Bengal as a consultant and key technology partner to the Government of West Bengal facilitates e-Governance initiatives of the State Government to make West Bengal a Digital Enabled State for the last couple of years. The eAbgari, eNathikaran, eBhuchitra, e-Vahan, e-Sarathi, IFMS, eOffice, e-pension, Swasthya Sathi, Khadya Sathi, Duare Sarkar, various social security & DBT schemes such as Jai Bangla, Laxmir Bhandar, Kanyashree, Student Credit Card and host of other initiatives are some of the landmark projects executed immaculately by NIC in West Bengal.

NIC West Bengal team, apart from the existing projects, is very enthusiastically and proactively taking up the new challenges in the fields of emerging technologies such as AI, Block Chain, IoT, Machine Learning etc.

I congratulate and wish success to the entire NIC team in their new initiative and urge them to explore hitherto untouched areas where e-Governance can improve service delivery to the people.

Dr H. K. Dwivedi, IAS

Chief Secretary, Government of West Bengal

In News

Visit of DDG & HoD, AIRD

DDG and HoD, AIRD NICHQ, Ms. Sharmistha Dasgupta, on her visit to NIC, West Bengal during 08th to 12th November 2021 had an intricate dialogue with DDG & SIO, NICWB, Dr Saibal Sarkar, regarding full-blown commissioning of AI Lab, Kolkata and penetration of hitherto untouched government sectors with broad AI principles and AI-led applications entailing adequate

mechanism for human oversight and control. SIO along with STD & ASIO, Shri Atanu Das has apprised her of initiatives undertaken by NICWB to introduce AI in e-Governance Sectors. She has also visited the iNOC & MiniDC, NICWB where DGX A100 Server has been commissioned recently.

On her visit, she has met the Commissioner of Police (CP), Kolkata and other senior officials and discussed the feasibility of introducing AI-driven software in various operational areas of Kolkata Police.

CP has expressed his intent to introduce NIC-developed Face Recognition System in tracking missing persons and criminals and other AI-driven solutions in the areas of Smart Traffic Management System, Video Analytics and CDR & IPR Analysis.

In her another meeting at West Bengal Pollution Control Board, the Member Secretary has shown avid interest in introducing AI in prediction of Air Quality Index and requested for PoC from NIC.

News & Events

In News
News & Events

Presentation of VLT&EAS

Department of Transport, GoWB has invited NIC along with other solution providers to deliver a presentation on Vehicle Location Tracking and Emergency Alert System (VLT&EAS) of NIC on November 24th, 2021 at Paribahan Bhavan II, Kolkata.



Janab Firhad Hakim, Hon'ble MIC Transport Department, Shri Rajesh Sinha IAS, Secretary and other senior officers of the Department and Directorate were given the demonstration.

Shri Anil Kumar Arya, STD, NIC Uttarakhand demonstrated the NIC VLTEAS software for Command and Control Centre which is successfully implemented in Uttarakhand and with value-additions in Goa and Rajasthan in presence of DDG & SIO, NIC WB and other NIC officers of NIC eTransport team.

i-RAD Implementation in the State

With the objective to improve road safety in the country, a rollout meeting on implementation of i-RAD (Integrated Road Accident Database) project comprising of i-RAD mobile and Web application, an initiative of the Ministry of Road Transport and Highways (MoRTH), GoI, funded by World Bank and developed by NIC in collaboration with IIT Madras, was held on 24th November 2021 at Parivahan Bhawan-II, Kasba, Kolkata.

Bureaucrats, dignitaries and senior officials from departments of Transport, PWD, H&FW, Traffic & Road Safety, Police (Traffic), present in the meeting, were sensitized with the workflow of the project and their roles and responsibilities by the Technical Team of NIC.

District Visits by DDG & SIO

DDG & SIO, NIC, West Bengal, Dr Saibal Sarkar, along with Sc-F & ASIO Shri Shivaji Mukherjee visited Paschim Bardhaman and Bankura district NIC offices on 9th and 10th December 2021 respectively and interacted with the DIOs

In Focus

Duare Sarkar
Government at your Doorstep



'Duare Sarkar' (DS) is a massive outreach program and an administrative innovation of the West Bengal Government. It aims to make existing crucial public service flagship schemes such as globally acclaimed 'Kanyashree', 'Khadyasathi', 'Swasthasathi', Social Pension schemes etc. of GoWB more accessible to the targeted and underprivileged citizens who were hitherto not getting the benefits of government services.

'Paray Samadhan' (Solution at Mohalla) is another outreach drive to address elementary level work with a mission mode approach covering infrastructure, manpower, supply and services related issues at the grassroots level in municipal areas as well as at Panchayat areas. The infrastructure-related issues included repairing drainage & roads, drinking water & sanitation, installation of street lights, among other things. Works, including deployment of doctors at healthcare centers and appointment of conservancy staff, were carried out while addressing the manpower related issues.

During his district visits, on separate meetings, the SIO has apprised the DM Paschim Bardhaman, Shri S. Arun Prasad, IAS and DM Bankura, Smt K. Radhika Aiyar, IAS of various ongoing e-Governance services running in the district such as Duare Sarkar,



Laxmir Bhandar, Joy Banngla, eOffice, Vahan, Sarathi etc.

SIO has also urged them for the implementation of the Service Plus and AI-enabled services at the district level. DM of both the districts have shown keen interest in implementing AI in various operational areas in the district like road safety to mention precisely.

State Project

<https://ds.wb.gov.in>

The Schemes:

1. Khadya Sathi
2. Swasthya Saathi
3. Caste Certificates
4. Jai Johar
5. Taposili Bandhu
6. Sikshashree
7. Aikyashree
8. Kanyashree
9. Rupashree
10. MGNREGS (100 Days' work)
11. Krishak Bandhu
12. Manabik

The 'Duare Sarkar' portal is facilitating User Registration at all hierarchical levels, Camps Scheduling, Venues & Geo-location tagging, Beneficiary Registration & recording their grievance/needs along with online tracking and monitoring of services being delivered.

The portal is horizontally and vertically scalable to cater to 2000 concurrent users and crores of beneficiaries being serviced through 32000 camps over 10500 community-level issues.

The Web portal is configurable for on boarding of any new schemes and optimized look and feel has been achieved by using CSS3 and HTML5 technology for any device and any screen. The underlying technology stack constitutes of Java Script, iTextSharp, XML and Service-Oriented Architecture (SOA), GPS mapping of DS Camps, Business Intelligence-enabled MIS, Mobile Apps for Geo-tagging and real-time status of DS Camps, API interface for the respective departmental portal, Dynamic Dashboard, Hourly SMS alerts/notification to concerned authorities.

NIC is managing the entire DS portal in close association with the state government.

Mainak Mukhopadhyay, Scientist-F
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Laksmir Bhandar

The Government of West Bengal has recently rolled out its largest ever cash transfer scheme, 'Laksmir Bhandar'. This scheme entails a Direct Benefit Transfer (DBT) to the beneficiary's bank account through an integrated payment gateway.

The scheme's objective is to improve the financial condition of women in the state and to promote their empowerment. The scheme 'Laksmir Bhandar', an assured income scheme, has been contemplated for the unemployed female members within the age group of 25 to 60 of rural & urban areas who are otherwise not receiving any regular salary or pension from any government or undertaking organization. Financial assistance of Rs. 1000 to the SC, ST and Rs. 500 to the others will be credited by direct bank transfer to an

AADHAR linked bank account held solely by the eligible adult female member(s) of the household.

NIC has been entrusted with the project and has completed the design, development and hosting of 'Lakshmi Bhandar' portal successfully in a record time in spite of the prevailing pandemic situation in the state. Large number of Camps at each GP has been setup and more than One Crore forty



two lakhs beneficiaries received their monthly payment since September 2021.

Ashis Mukherjee, Scientist-F
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Spotlight

e-Office In Government of West Bengal

eOffice, a product of NIC, aims to support governance by ushering in more effective and transparent inter and intra-government processes.

Policy and Setup

Government of West Bengal decided to implement eOffice in all 50 Secretariat Departments simultaneously from 01.01.2018. A centralized architecture of eOffice instance for GoWB scalable to 50,000 employees/officers has been set up in the cloud infrastructure of SDC WB comprising of around 80 VMs to support all 54 departments, 22 districts, Kolkata Police, West Bengal Police.

Operations

A Quick Response Team (QRT) cum helpdesk

Central Project

has been setup centrally to cater requests from all the users.

Status (as on 18-11-2021)

	Count	Users	efiles
Secretariats	54	10479	257678
Directorates	180	14054	162925
Districts	22	7950	103890

Impact and Benefits

Currently, all 54 departments, 180 directorates/parastatals, all 22 districts are working in eOffice with around 18,000 files transacted daily. eOffice has been instrumental in timely file movement digitally and thus working and productivity of departments remained unperturbed during the prevailing pandemic situation.

Siddhartha Sen, Scientist-D
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TechSpace

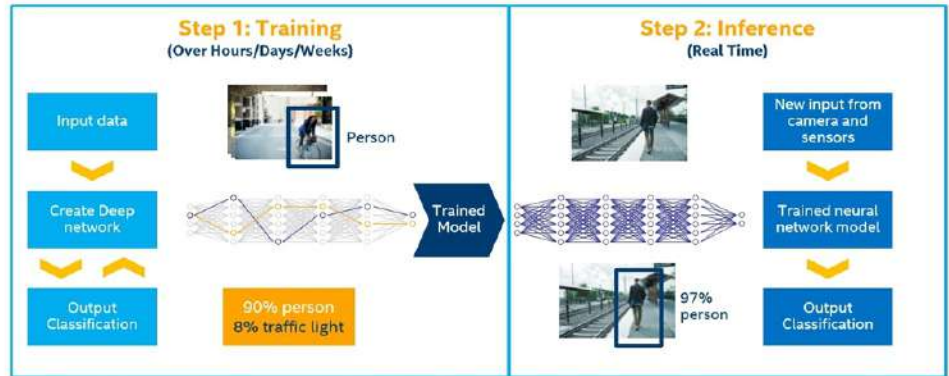
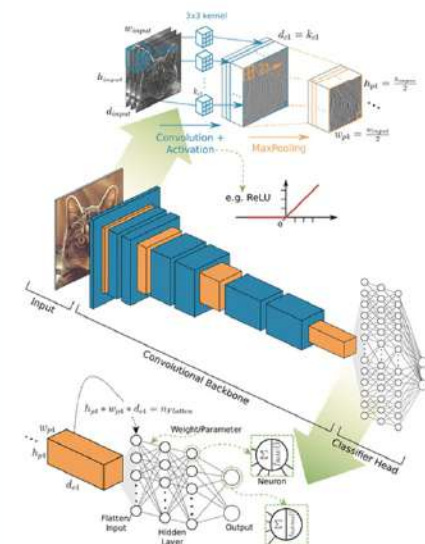
Overview

Deep Learning is a type of Machine Learning, inspired by structure of human brain. It uses a multi-layered structure of algorithms called neural networks. Deep learning models can achieve state-of-the-art accuracy, sometimes even exceeding human-level performance. Deep Learning Models are trained by using a large set of labelled data and neural network architectures that contain many layers.

Convolutional Neural Networks are typical neural network architectures. They are distinguished from other neural networks by their superior performance with image, speech, or audio signal inputs. A CNN architecture consists of three main types of layers (sub-structures), which are:

- Convolutional layer
- Pooling layer
- Fully-connected (FC) layer

The convolutional layer is the first layer of a convolutional network. The convolutional layers can be followed by additional convolutional layers or pooling layers whereas the fully



A schematic diagram showing Training and Inference using Deep Neural Networks

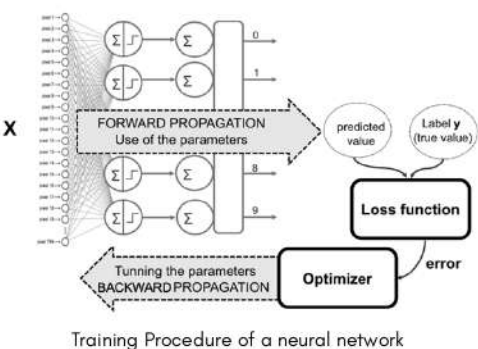
connected layer is the final layer. A convolutional layer propagates relevant information to the subsequent layers maintaining spatial structural integrity between neighbouring pixels. Pooling layers bottlenecks outputs from previous layers to pass only the relevant information and finally fully connected (FC) layer transforms the spatial output into a final feature embedding vector.

Learning or Training process of a Neural Network:

1. Start with values (often random) for the network parameters.
2. Take a set of examples of input data and pass them through the network to obtain their prediction.
3. Compare these predictions obtained with the values of expected labels and calculate the loss with them.
4. Perform the back-propagation in order to propagate this loss to each and every one of the parameters that make up the model of the neural network.
5. Use this propagated information to update the parameters of the neural network with the gradient descent in a way that the total loss is reduced and a better model is obtained.
6. Continue iterating in the previous steps until we consider to achieve a good model.

Inference/deployment of a Neural Network:

Once a neural network is trained, a weight file is generated. This trained neural network architecture (usually in form of python scripts) combined with the weight file can be either directly deployed to application hardware device or server (which can be called through an API service). There can be additional files for data preprocessing and post-processing operation depending on the nature of application.



Presented by:
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Highlights

eSuchi

NIC Purulia Initiative

<https://esuchi.puruliya.in/>

Purulia District Administration and District ICDS Cell launched an online management system (e-Management of Severely Underweight Children; e-SUCHi) for monitoring and tracking of severely underweight children of the District with the technical support of NIC, Purulia.

The application is a useful tool for CDPO and Supervisors to identify the critically malnourished children as well and helps to find out the developmental gaps and ICDS service issues upto Anganwadi level and eventually take the corrective measures.

As on 31.10.2021 already 4616 malnourished children has been registered in the portal across 23 ICDS projects of the district and 25761 monthly service record has been entered since January 2020.

Editorial Board

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District at a Glance

<https://darjeeling.gov.in>



Nestled among the rolling mountains with the glistening Mt Kanchenjunga towering over the azure sky, Darjeeling, fondly called "Queen of the Hills", provides a perfect gateway for those seeking to be in harmony with nature. This is the land of the muscatel flavored Darjeeling tea revered by connoisseurs across the globe.

Administrative Setup

Darjeeling District is divided into four sub divisions namely Darjeeling Sadar, Kurseong, Mirik and Siliguri, Darjeeling Sadar being is the district headquarters. Siliguri Sub-Division is the largest of the four sub divisions and Mirik is the smallest. The district has nine development blocks, three municipalities and one municipal corporation.

ICT Initiatives

Considering the geographical challenges and requirement of last mile delivery of welfare services, adoption of ICT becomes an imperative for the district administration. eOffice, an product of NIC, has been holistically added to the district administration and finally all the file movements and decision making in administration transformed into a paperless system. eOffice was later also introduced into the office of Principal Secretary Gorkhaland Territorial Administration (GTA). Presently DM Office Darjeeling has 2454 active eFiles and 193 users while GTA has 8622 active files and 716 users.

The district website developed with S3WaaS (Secure, Scalable and Sugamya Website as a Service) and hosted at NIC Cloud is in a constant flux of providing citizen information about the latest Government initiatives. The website is developed in bilingual format in compliance with GIGW guidelines and multi-device compatibility.

National and State Level Projects

The district administration has been instrumental in the implementation of key national e-Governance projects like e-Sarathi, e-Vahan, and land registration. Darjeeling district also became a pilot implementer in the state for eProsecution project, a single platform for police and prosecution where police administration can seek Legal advice/ help from prosecutor directly without any physical file transfer. This project is a part of the iCJS (Interoperable Criminal Justice System) that aims for the process of speedy justice by facilitating data-exchange between the courts, police/prosecution, jails and the forensic labs.

The key state level projects like JaiBangla, Duare Sarkar, JaiJohar, Manabik, Kanyashree, Rupashree, Lakshmir Bhandar etc. were implemented at the district level.

NIC District Centre

NIC Darjeeling District Center hosts an operational VC system of 100 Mbps bandwidth and expanded the network in collectorate building comprising of three studios to run in parallel due to high demand of virtual conferences during the outbreak of pandemic.

Darjeeling



e-Governance & public service delivery using ICT is the new normal in Governance with focus on citizen centric services. The beauty of e-governance is that a few keystrokes can bring smiles on a million faces. NIC has always been a driving force towards realization of every government initiatives in building a welfare society. I congratulate the entire NIC team for taking e-Governance on par with modern standards. It is a moment of great achievement that 'Uttaran' from NIC West Bengal is trying to highlight the ICT interventions in the critical sectors of administration.

Shri. S. Ponnambalam, IAS
DM Darjeeling

NIC Darjeeling provides LAN based internet to DM Office with 145 active nodes and wi-fi services to 11 zones at present. It also provides a dedicated 8 mbps connectivity to the Director General of Defence Estate, Jalapahar.

The district is preparing a plan document for an outcome based project management system named 'PARINAM', deployable both as a web and a mobile application, to address the problem in the scenario of parallel government projects executed under the district. It will track the issues flagged by the stakeholders and create a platform for resolutions. It will also create a visual knowledge about the progress and need for action for various government initiatives.

Saikar Narayan Bhattacharjya, Scientist-C &
District Informatics Officer
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Acknowledgement



Appreciating the significant contribution of Dr Subrata Roy Gupta, Scientist-D and DIO NIC Howrah, for his successful association in development and implementation of many flagship eGovernance programmes like, Kanyashree Online, SaboojSathi Online, Integrated Skill Development Management System of Utkarsh Bangla etc. He also spearheaded development and national rollout of TrackChild System. Dr Roy Gupta has also been working towards development of AI enabled applications like Face Recognition based Attendance System (FRBAS) & Early screening of Covid 19 from Chest X Ray Images.