National Institute of Electronics and Information Technology

(ISO 9001:2015 Certified Organisation)

An Autonomous Scientific Society of Ministry of Electronics and Information Technology. Government of India

NIELIT NEWSLETTER

HIGHLIGHTS ◉

- ◎ Inauguration of Awareness Programme for Senior Citizen
- ◎ Cyber Forensic for Police Officials
- ◎ Faculty Development on IoT
- ◎ Centre In Focus - NIELIT Centre Aizawl
- ◎ **Tech-वार्ता**:Artificial Intelligence of Things

Warm welcome to yet another issue of NIELIT Newsletter. This particular issue embodies an attempt to exude the notable activities of our NIELIT Centres such as various Faculty Development Programmes, Industrial Training along with testimonials submitted by the participants.

STEM is an approach to learning and development that integrate the areas of Science, Technology, Engineering and Mathematics. STEM education is meant for designing infrastructure, curriculum and to teach our children with the best guidance and support. Information and communications technology (ICT) may prove handy in many ways to implement the requirements. Many countries preserver to become technological stalwarts by implementing STEM from class I onwards. During 2016, Canada has 21.2% of graduates who studied in STEM programs. Other countries with good percentile are US, France, Germany, Austria etc.[(STEM education in Canada: A knowledge synthesis, 2016, by I DeCoito), (How Canada became an education superpower, BBC news, Aug1,2017), (Accountability in Education: Meeting our Commitments, 2017, by G. UNESCO)].

Many firms in the United States followed the guidelines of the National Science Foundation and considered 'Information technology' as one of the subjects of significance. Different countries organized STEM-based summer enrichment programs. They also conducted several Olympiad examinations to bring the youth together and assess their skills in friendly ways. Globally, There are lots of demands for better practices to meet the globalization, technological development and automation as per Industry 4.0. However, many Institutes are still having the age old model of education in pursuit. Hopefully in India also with the advent of National Education Policy 2020 (NEP), some better and more effective practices may emerge.

In India the total fresh STEM graduates were 2.6 million in 2016 ['India's STEM talent sees shortage despite maximum graduates', The Hindu,Feb 28, 2018]. Research reveals that children develop keenness in STEM fields at an average age of eight. Many STEM-based institutions are resorting to different innovative techniques to instill in children the concept 'do it yourself'. The govt. of India as part of the 'Skill India' campaign has supported more than 3000 schools to equip themselves and help students get hands-on experience in futuristic technology with Atal Tinkering Labs (ATL) [NITI Aayog's AIM has selected 3,000 additional schools, the Economic times, Jun12, 2018, & ATAL labs]. STEM education also needs quality teacher with latest know-how practices.In this context there exists a big challenge in the effective implementation of STEM-based education in India.Several schemes are rolling out, such as AI for youths, Robotics or Automation. Some of the urgent ICT skills required by the children of class I-IV are

a. Start/join an Online Class using available Gadget.
b. Downloading the assignment or lecture notes and attachment of files.
c. Choosing different languages and type an assignment using IT gadget.
d. Solving assignment with the craft paper, taking photos, cropping/editing the images.
e. Understanding the lecture Videos, few Robotics and minor troubleshooting etc.

To keep pace with the current call , NIELIT also started STEM-based summer training / Robotics training for the School Children to meet the urgent ICT skills and also Startup base Internship for graduates.

To wind up I am hopeful the readers find the news updates and information that this issue carries forth enriching and interesting and take the opportunity to request the readers for their valuable feedback at newsletter@nielit.gov.in

Enjoy reading!

Dr. Yumnam Jayanta Singh,
Director/Scientist-F

News from Aurangabad Centre

Online Inauguration of Awareness Campaigns for Empowerment of Senior Citizens in e-Services through ICT tools
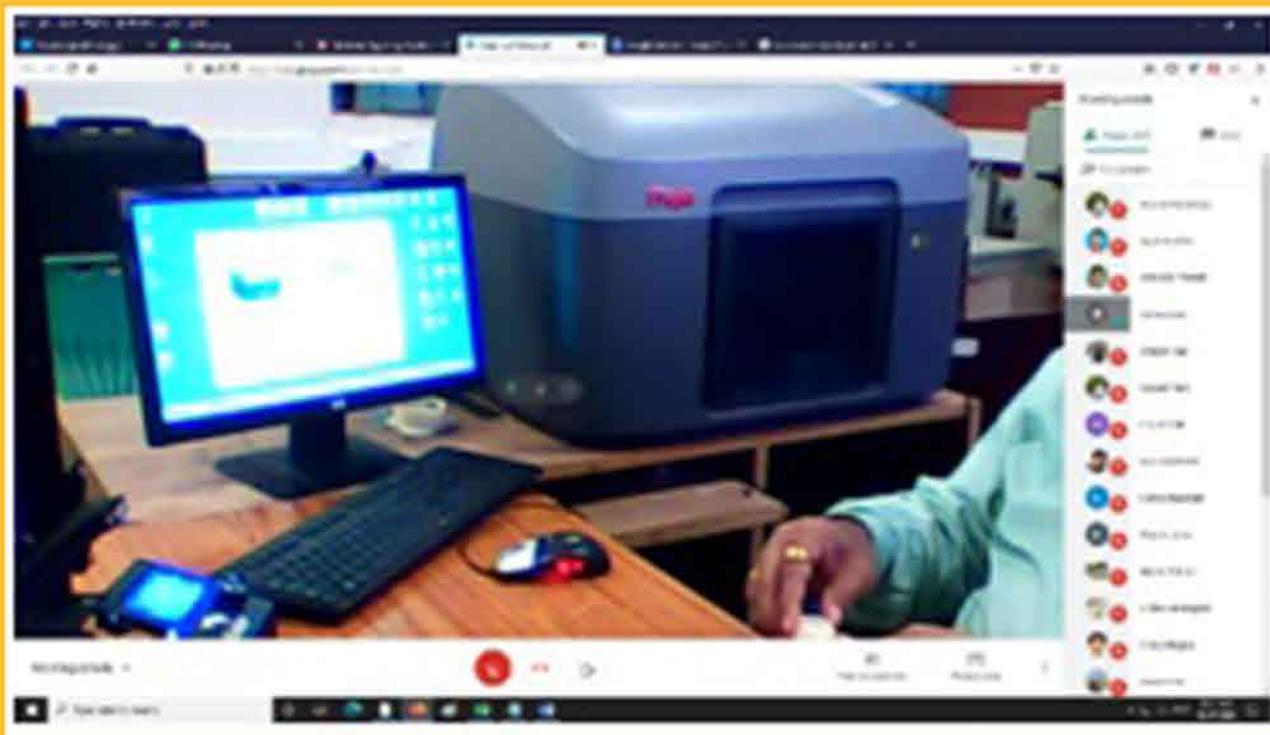

Awareness campaigns/events for Empowerment of Senior Citizens in e-Services through ICT Tools at NIELIT Aurangabad was inaugurated online by Shri Sanjay Dhotre, Hon'ble Union Minister of State for Education, communication and Electronics & Information Technology, Govt. of India in the august presence of Dr. Jaideep Kumar Mishra, Joint Secretary (HRD) MeitY, Govt. of India and Director General, NIELIT on July 30, 2020. Dr. Sanjeev Kumar Gupta, Executive Director, NIELIT Aurangabad, Other NIELIT officials and many senior citizens participated in the online inauguration function.

Under this program, senior citizens are trained in the use of smart phones, online money transactions, health awareness and yoga, awareness about government rules and schemes for senior citizens and other online transactions like IRCTC, Zomata, MSRTC, Ola etc. The online training is provided free of cost and is conducted in Marathi. Online training program for Senior Citizens of Nandurbar District was conducted during September 15-21, 2020 by the centre for around 200 senior citizens.

Webinars on	◉ Bot Development	◉ Machine Learning
	◉ Robotic Process Automation	◉ Neural Networks
	◉ Internet Of Things	◉ 3D Printing

A series of live webinars on technology and innovation factors impacting the industries under FutureSkills PRIME Project sponsored by MeitY, GoI was conducted at NIELIT Aurangabad during the first week of July 2020. BOT Development, Robotic Process Automation, Internet of Things, Machine Learning and Neural Networks and rapid growth of 3D Printing are key technology and innovation factors impacting the industries. Such factors come with important challenges. So reskilling of employees in these emerging fields of technology becomes important. More than 120 faculty members of Maharashtra, Madhya Pradesh and Chhattisgarh government engineering and polytechnic college had participated in the webinar.

NIELIT Gangtok to work as Co-Lead centre for Augmented and Virtual Reality

NIELIT Gangtok has been selected as the Co-Lead Technology Resource Centre for Augmented and Virtual Reality (AVR) under the ambitious FutureSkills PRIME (Programme for Re-skilling/Up-skilling of IT Manpower for Employability) project of the Ministry of Electronics and Information Technology (MeitY), Govt. of India.

The Centre will work jointly with CDAC-Pune and NIELIT centres at Kolkata and Chandigarh to institutionalize Blended learning mechanism in a hub-and-spoke model for Augmented and Virtual Reality. 4 nos. resources of NIELIT Gangtok have been trained as Master Trainers under the project through the Online Training organised by CDAC- Pune from 10th August 2020 to 26th August 2020.

Lokmat Times

'Allay Sr citizens' fears of technology'

Use of ICT vital for all: Union Minister Dhotre

LOKMAT NEWS NETWORK
AURANGABAD, JULY 30

"Acquaintance with Information and Communication Technology (ICT) is the need of the hour for all including young and senior citizens. Today's new generation has grown up with technology, so they are well-versed in the use of ICT. But, the use of ICT and its acceptance is a bit challenging for senior citizens," said Sanjay Dhotre, Union Minister of State for Electronics and Information Technology.

He was speaking during the inaugural ceremony of an awareness campaign on 'Empowerment of Senior Citizens in e-Service through ICT Tools' being organised organised by National Institute of

Union Minister of State for Electronics and IT Sanjay Dhotre on Thursday speaking in the inaugural function of the awareness campaign among senior citizens about the use of ICT being organised by NIELIT, Aurangabad.

Electronics and Information Technology (NIELIT) of the city on Thursday.

Joint secretary of Electronics and IT Ministry Dr Jaideep Kumar Mishra, top officers of the ministry and all

NIELITs participated in the ceremony.

The minister said that there is need to allay fears from senior citizens minds about the use of new technology

Earlier, executive director of local NIELIT Dr Sanjiv Kumar Gupta made an introductory speech. The NIELIT has launched short-term courses to train 15,000 senior citizens in the use of ICT and smart phone under its empowerment campaign.

The campaign is being implemented in five districts-Aurangabad, Akola, Nashik, Nandurbar and Thane on an experimental basis. There is no entry fee and certificate is given on completion of the course.

Aurangabad First
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Lokmat Times July 31, 2020

सकाळ

ज्येष्ठांना करणार तंत्रस्नेही !

नाइलिटकडून प्रायोगिक तत्त्वावर राज्यातील पाच जिल्ह्यांची निवड

सकाळ वृत्तसेवा

औरंगाबाद : ज्येष्ठ नागरिकांसाठी नाइलिटने तयार केलेल्या प्रकल्पाचे केंद्रीय राज्यमंत्री संजय धोत्रे यांनी अकोला येथून ऑनलाईन उदघाटन करून संवाद साधला.

Sakaal August 02, 2020

लोकमत समाचार

निःशुल्क प्रशिक्षण कार्यक्रम का ऑनलाइन उद्घाटन

Aurangabad Main
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LokmatSamachar 02-08-2020

ज्येष्ठ नागरिकांसाठी नाईलिट प्रशिक्षण ऑनलाईन उपक्रम

जिल्ह्यातील नागरिकांना सहभागी होण्याचे आवाहन

JanshaktiNandurbar 03-08-2020

मंडे पॉझिटिव्ह ■ 'नायलिट' संस्थेच्या पुढाकाराने आजपासून प्रारंभ; सोशल मीडिया-डिजिटल पेमेंटचेही प्रशिक्षण देणार

मोफत ऑनलाइन कोर्समधून ज्येष्ठांना स्मार्टफोनचे धडे

DivyaMarathi Aurangabad 03-08-2020

News from Kohima Centre

Training cum Investigation Labs in NE States and Cloud based Centralized Cyber Forensic Lab Infrastructure

The first meeting of PRSG for project "Development of Cyber Forensic Training Cum Investigation Labs in NE State and Cloud-based Centralized Cyber Forensic Lab Infrastructure "was held via VC on 5th August, 2020 under the chairmanship of Dr. Gulshan Rai Ex-National Cyber Security Coordinator (NCSC). The meeting was also attended by other senior officials of MeitY and NIELIT.

Cyber Forensic for Police Officials of North Eastern States

A one day awareness programme via Webinar was conducted for the police officials of NE States on the topic "Tackling Crimes in Cyber Space" on 18th August, 2020. The inaugural programme was graced by Dr. Jaideep Kumar Mishra, Joint Secretary (MeitY) & DG NIELIT. Altogether 104 Police Officials attended from Tripura, Mizoram, Manipur and Nagaland.

News from Chandigarh Centre

Partnership with Tally Academy

NIELIT Chandigarh became a Tally Academy Network Partner which provides industry recognised course content, online examination and certification, quality accounting jobs listing and placement assistance. Students will help in getting industry recognition by providing them the right kind of accounting and Tally education

Instructor Led Online Training

NIELIT Chandigarh launched new courses in instructor led online training in various emerging technologies. More than 200 students have been trained in the following technologies.

◉ Artificial Intelligence and Machine Learning
◉ Certificate Course in Drupal
◉ Robotics Programming with Arduino
◉ Big Data Analytics using Hadoop
◉ MEAN Stack Development
◉ Blockchain Developer

◉ Apache Spark Certification Course
◉ Computer Networks for
◉ BeginnersMachine Learning and Deep
◉ Blockchain Essentials
◉ Electronic Circuits and Devices
◉ Tally Academy courses Learning

Artificial Intelligence and Machine Learning

NIELIT Chandigarh successfully conducted a one week Faculty and Professional Development Training programme on "Artificial Intelligence and Machine Learning" for faculty members of various colleges, universities, Government Organisation officials and Corporate Officials of Punjab State.

Touchless Handsanitizer Dispenser

In order to provide more safety to staff against COVID-19, NIELIT Chandigarh designed a "Low Cost Touchless Handsanitizer Dispenser" using Ultrasonic sensor with features like sound alert and adjustable timing. The Dispenser was developed by Mr. Ravi Kumar and Mr. Jaspreet Singh under the guidance of Dr Sarwan Singh, Dy. Director, NIELIT Chandigarh.

Training For B.Tech Students

मुर्थल वि.वि. में ब्लॉकचेन पर वर्कशॉप आयोजित, 105 विद्यार्थियों ने लिया भाग

The Centre conducted the following trainings of two weeks each in online mode for the B.Tech Computer Science final year students of DCRUST (Deenbandhu Chhotu Ram University of Science and Technology) Murthal. The trainings were conducted by Ms Anita Budhiraja and Dr Sarwan Singh.

◉ **Blockchain Technology : 107 students**
◉ **Python and Data Science: 67 students**

Project of Chandigarh Administration

Fully Online Counselling Project of UT Education Department, Chandigarh was successfully implemented. The project was totally paperless and 2 round of counselling were done in August, 2020 and September. 2020 wherein approximately 15000 students were given admission in 40 government schools of Chandigarh in 10+1. It was conducted under Dr Manish Arora, Addl. Director, NIELIT Chandigarh.
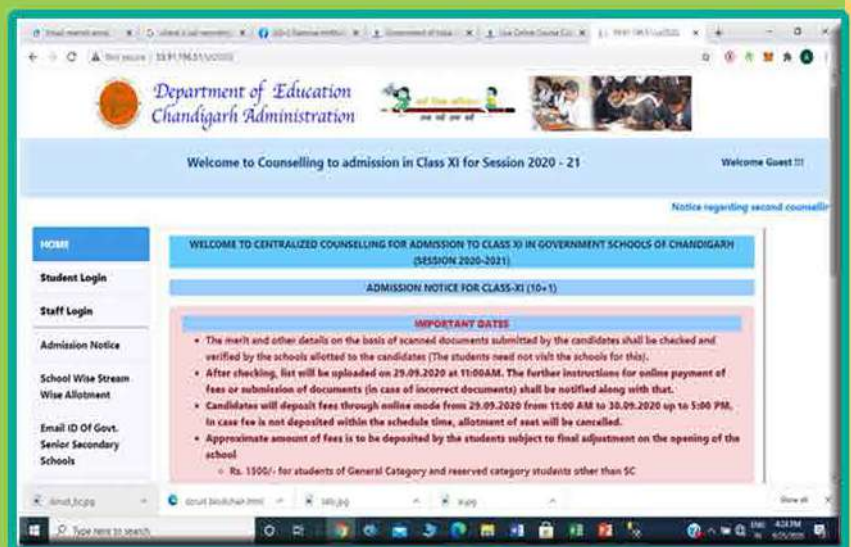
News from Delhi Centre

Imparting Online Education

"It was very interesting and valuable experience. I learned a lot, it gave me a good grounding in the basics. It really made me more passionate in the field of Digital Design and Verilog HDL along with FGPA Prototyping. Faculty members are very supportive and clear all our doubts in the best way possible. So, I owe a lot to the NIELIT for providing me such insightful and conceptually sounded Course."

★★★★★

Abhishek Kumar
Certificate Course in
VLSI Design
4 Weeks (Faculty - Mr. Nilesh Varshnay)

NIELIT DELHI CENTRE

"The training was very good and informative, I was able to learn new skills and enhance my previous skills! And mam provided very good real-life examples related to programming."

★★★★★

Prateek Gupta
Certificate Course in
Programming Through Python
4 weeks (Faculty - Ms.Oshina Vashisht)

NIELIT DELHI CENTRE

NIELIT Delhi Centre has been conducting Online Courses due to COVID 19 pandemic. Online training were conducted in Python, Digital Marketing, Data Science & Machine Learning, Computer Tools & Programming Languages, VLSI Design, IoT with Arduino/RPI, Embedded Systems etc. A total of 584 candidates have been enrolled in various short term online courses during Jun- Sept 2020 E-Certificates were awarded to all participants. The Centre received an overwhelming response in online courses and students have given positive. feedback and requests have been received to conduct advanced courses inonline mode in IT/Electronics areas.

Capacity Building for TCIL Employees

NIELIT Delhi Centre organized a 6-Full Day Online Capacity Building programme on "Computer & Managerial Skill Training" from 17 – 22 August, 2020 for Non-Executive Cadre Officers of Telecommunications Consultants India Ltd (TCIL), Delhi. The training was conducted for officials working in

Very informative, very useful, received deep knowledge of the subject, software, and implementation in our project works etc., Excellent learning. Helped to improve our work nature and presentation. All faculties are Good enough to answer patiently and teached well .Thank you all.

MUTHUSWAMY ASHOK KUMAR, ENGINEER

आपके द्वारा दिए गए इस प्रशिक्षण के लिए आपका बहुत बहुत धन्यवाद। प्रशिक्षण के लिए प्रश्न पूछने और दिए गए संबंधित उदाहरणों व अवसरों के साथ आपकी शानदार प्रस्तुति शैली भी काफी सूचनात्मक और सहायक सिद्ध हुई है। "एक शानदार व्यावहारिक पाठ्यक्रम - व्यक्तिगत और पेशेवर स्तर दोनों पर यह काफी बढ़िया रहा। मानवी मैडम अच्छी ट्रेनर रहीं, उन्होंने विषयों को अच्छे से कवर किया जो सभी को पसंद आता था और काफी सहायक सिद्ध हुआ। NIELIT Delhi के सभी प्रशिक्षकों को मेरा धन्यवाद।

जसविंदर कौर, व्यवस्थापन अधिकारी

PAN India offices of TCIL to provide an insight into various Computer Office Tools and Development of Managerial Skills. Computer Proficiency test and Online test were conducted for evaluating them for their DPR. The participants gave wonderful feedback and were overwhelmed for the skill up-gradation training received.

O Level Course for Directorate General of Resettlement (DGR)

Testimonials

★★★★★

"Today we have completed theory part our DGR-PRC course. The course could not be conducted as full time due to covid-19. Because of the initiatives taken by the institute in instructors we could complete the course online through live classes. It was a great experience to attend classes after a long gap of around 20 years after joining service. My sincere thanks to the entire NIELIT team and especially to our Instructors Ankur Sir, Nilesh Sir, Oshina Ma'am and Pooja Ma'am."

AJAY MALIK
Junior Warrant Officers

★★★★★

"Many many thanks to my esteemed instructors, Ankur sir, Pooja madam, Nilesh sir, Oshina Madam, and all other faculty members who have been associated with our DGR batch. It was a wonderful and valuable experience. IT training imparted by NIELIT would surely be immense usefull in my future profession. I salute for the memorable cooperation and kind of respect received during the training. I express my sincere gratitude and wish NIELIT all the best"

RC BADAI
Honorary Sub Lieutenant

★★★★★

"I express my heartiest gratitude to our esteemed teachers viz Ankur Sir, Nilesh Sir, Pooja Madam and Oshina Madam for completion of DGR-PRC. Though learning is a continuous process that lasts from cradle to grave but still it gives us immense satisfaction for attending this course. The course bestowed us familiarity regarding world of Computer Sincere thanks to our teaching faculty for their soberness, experience, subject domain knowledge and art of understanding."

KHURSHEED AHMAD RASHIE
Chief Petty Officer

NIELIT Delhi Centre conducted a training program of NIELIT IT-O Level (NSQF Level -05) for JCOs/ORs, sponsored by Directorate General Resettlement, Ministry of Defence, GoI. A total of 40 officials of Army, Navy and Air Force participated in thetraining which has been conducted successfully.However, due to COVID 19 pandemic and lockdown imposed in the country, the training was partly conducted through Online Mode in consultation with DGR and the participants attended the training from their respective locations through instructor–led live classes. The training was completed succesfully as per the testimonials given by the participants.

National Eligibility Cum Entrance Test 2020 at NIELIT Imphal

National Eligibility Cum Entrance Test (NEET (UG)-2019) was conducted on 13th September 2020 at NIELIT Imphal by National Testing Agency (NTA) for admission to MBBS/ BDS course in Indian Medical/ Dental colleges. A total of 300 candidates attended the test.

News from Agartala Centre

Online Industrial Training

Online Industrial Training on Programming Essentials in Python, AutoCAD along with Soft skills training were started at NIELIT Agartala on 06/07/2020. Students from different Engineering Institutions & Universities joined with good response.
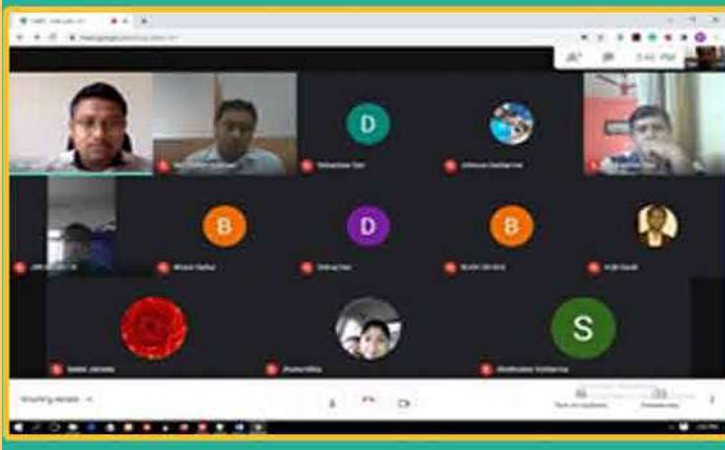
Online Industrial Training for faculties of Tripura Institute of Technology (TIT),Govt of Tripura commenced from 16th July 2020 on AutoCAD.

Online Industrial Training are in progress at NIELIT Agartala on "IoT Fundamentals: Connecting Things", "Programming Essentials in Python" & "AutoCAD".Students from different Engineering Institutions & Universities joined. (Dated 21/07/2020)
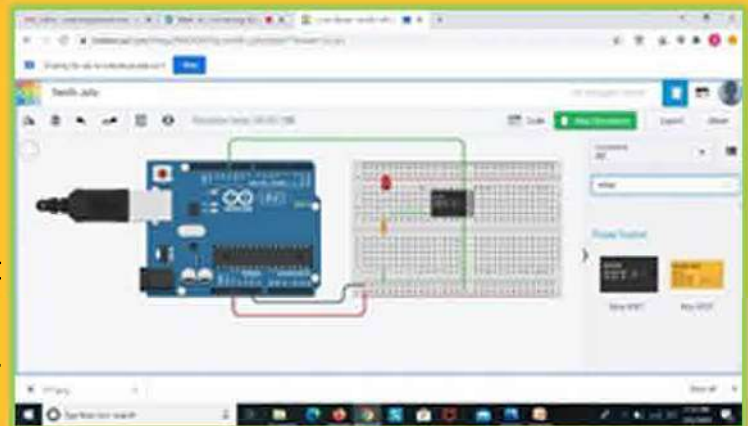
Cyber Security Workshop

State Institute of Public Administration and Rural Development (SIPARD),Govt of Tripura organized Online Cyber Security Workshop on "Cyber Security to combat Cyber Crime" w.e.f. 25/08/2020 to 27/08/2020. Govt. officials from different departments joined the training. Shri Binoy Das,Sr. Technical Officer delivered expertise lecture from NIELIT Agartala.

ISEA Workshop: One week National Level e-Workshop held from 21/09/2020 on Information Security under ISEA phase-II sponsored by MeitY,Govt of India. Shri Saju Vaheed A, Director of Higher Education,Govt of Tripura acted as Chief Patron of the work shop. Dr.Tritharaj Sen,Principal,Women's Polytechnic delivered welcome address. The programme was attended by Senior Officers of NIELIT Agartala and other Dept. (International:01;National:13, Tripura:123).Total 137 participants registered and are participating.
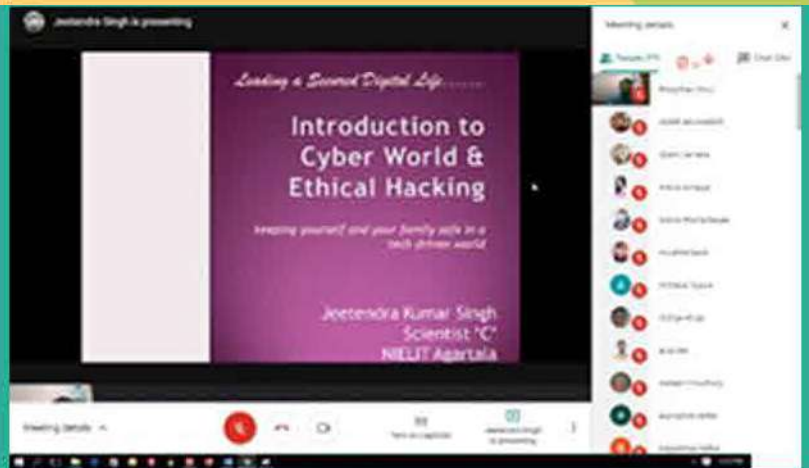
News from Gangtok Centre

Faculty Development Program on IoT
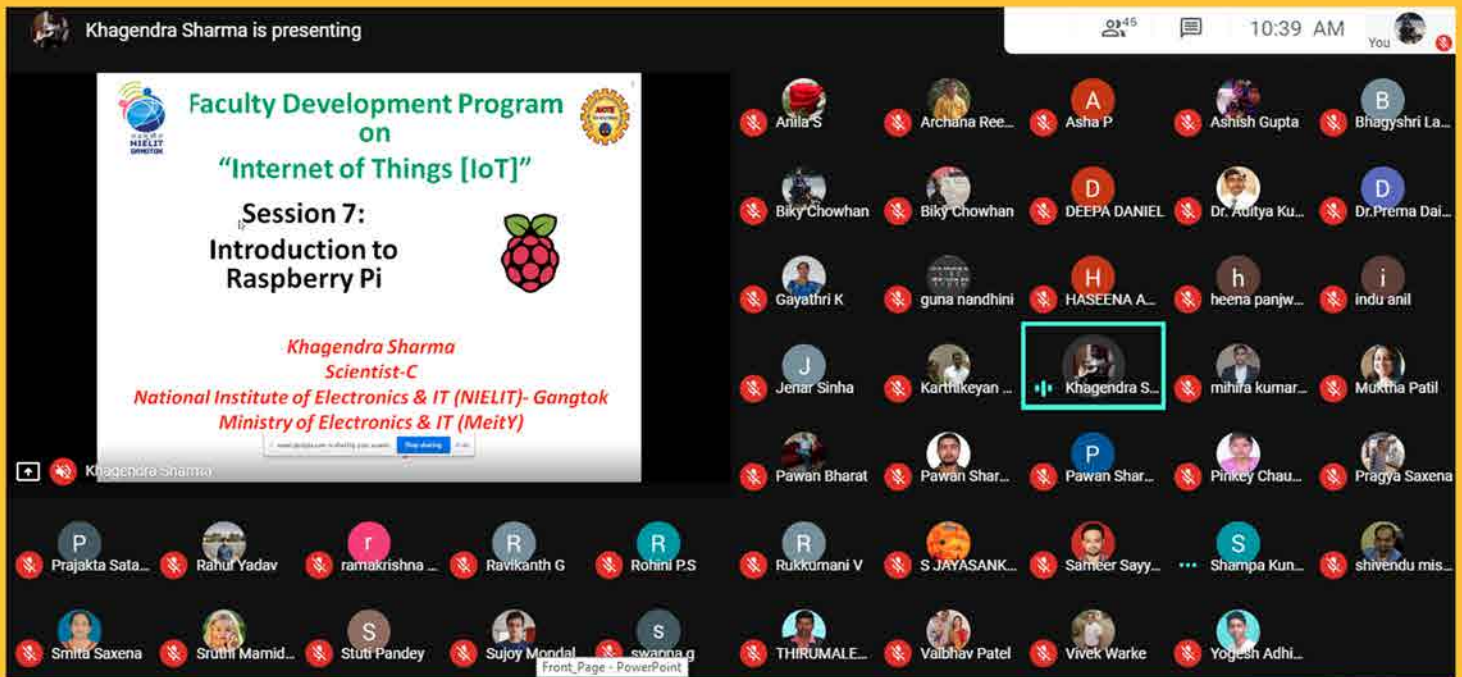
NIELIT Gangtok has successfully completed 5 days Faculty Development Program (FDP) on Internet of Things (IoT) which is one of the emerging technologies in the modern technology landscape. The program was sponsored by AICTE Training and Learning (ATAL) Academy with an objective to train Faculties, Post-Graduate students and Research scholars across the nation on emerging technologies.

The Faculty Development Program on IoT imparted by NIELIT Gangtok was inaugurated on 21st September 2020 virtually by Prof. Anil D. Sahasrabudhe, Chairman

AICTE along with 68 other online Faculty Development Programs on various other emerging technology areas which were being conducted by other reputed institutes across the country. Shri. Arup Chattopadhyay, Director-Incharge, NIELIT-Gangtok represented NIELIT Gangtok in the inauguration session.

A total of 161 participants from 20 states of India registered for the above Faculty Development Program conducted by NIELIT-Gangtok.

The training was conducted in Online mode covering a total of 14 different sessions on different technical aspects of Internet of Things and its Applications led by Shri Khagendra Sharma, Scientist, NIELIT-Gangtok and supported by his team members namely Shri. Pawan Kumar Sharma, Miss. Anugra Wangchuk Lepcha and Shri. Biky Chowhan. Shri. Hari Babu, Associate Director, CDAC-Bangalore was the external expert for two of the technical sessions.

Further, experts from Art of Living – Shri Raj Sharma and Mrs. Roshan Pradhan interacted with the participants on the final session of the 5 days training program to promote the Fit India Movement with focus on mental and emotional development, stress management, meditation, human values and ethics, health and happiness.

The Faculty Development Program conducted by NIELIT-Gangtok under Ministry of Electronics and IT (MeitY), Govt of India has demonstrated that with appropriate inhouse knowledge and expertise and proper adoption of modern education technology, effective delivery of education and training may be achieved from even the remote North-Eastern State of Sikkim to other states of India.

Cyber Forensics for Sikkim Police

NIELIT Gangtok in association with CDAC Kolkata launched a 2 days online training programme on Cyber Forensics for Sikkim Police personnel from 18th August, 2020. This was the first in a series of trainings to be offered for the various stakeholders of criminal justice system of the state government like Police Officers, Prosecutors and Judiciary. The training was implemented under the Ministry of Electronics and Information Technology (MeitY) sponsored project entitled "Development of Cyber Forensic Training cum Investigation Labs in North-Eastern States and Cloud based Centralized Cyber Forensics Lab Infrastructures", being implemented in 8 North-Eastern States by NIELIT Kohima and C-DAC Kolkata.

The inaugural session was attended by dignitaries from MeitY- Government of India, IISC Bangalore, DIT -Sikkim Government and CID -Sikkim Police. A total of 34 police personnel from Sikkim Police including senior officers and key persons deployed at field received the 2-day training online.

NIELIT CENTRE AIZAWL

NIELIT Aizawl established in the year 2001 is located at Industrial Estate, Zuangtui in the northern direction from the heart of the capital City of Mizoram. The site spread over an area of more than one (1) acre. Since the Centre is situated away from the hustle of the city, the atmosphere offers a congenial environment for a fruitful academic activity. This further provides an excellent option for aspiring students with quiet and undisturbed learning environment. NIELIT Lunglei extension centre was also established in the year 2013 at Pukpui, Lunglei which is the second biggest city of the state.

Areas of Excellence
◉ Cyber Security
◉ Cyber Forensic

Extension Center, NIELIT Lunglei

Courses Offered

Short Term Courses

◉ Certificate Course on Computer Concepts (CCC), **NSQF Level 3**
◉ Certificate course in Office Automation(CCOA), **NSQF Level 3**
◉ Certified Course in Web Designing, **NSQF Level 3**
◉ Certificate Course in PC Assembly & Maintenance, **NSQF Level 3**
◉ Certification Course in Data Entry and Office Automation, **NSQF Level 4**
◉ Certificate Course in Linux. Apache, MySQL and PHP, **NSQF Level 5**
◉ Financial Accounting with TALLY, **Non-NSQF**
◉ C Programming, **Non-NSQF**
◉ Microsoft Office, **Non-NSQF**
◉ Computer Networking, **Non-NSQF**
◉ Certificate Course in Java, **Non-NSQF**
◉ Basics of Electrical and Electronic Devices, **Non-NSQF**
◉ Basics of Digital Electronics Devices, **Non-NSQF**
◉ Mathematics for Class X, **Non-NSQF**
◉ Mathematics for Class XII, **Non-NSQF**
◉ English Grammar, **Non-NSQF**

Long Term Courses

◉ Diploma in Computer Science & Engineering (DCSE)+
◉ Diploma in Electronics & Telecommunication Engineering (DETE)+
◉ Bachelor of Computer Applications (BCA)*
◉ Master of Computer Applications (MCA)*

+ affiliated to Mizoram State Council for Technical Education (MSCTE)
* affiliated to Mizoram University (MZU), Central University

- **Director In-charge**: Shri T. Gunendra Singh, Scientist E
- **State Jurisdiction**: Mizoram
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  website: http://nielit.gov.in/aizawl/
  twitter: @AZL_NIELIT, facebook: @AZL.NIELIT

Expertise in Conducting Examnation

The following examinations are conducted at NIELIT Aizawl Campus during the months of October 2020 while maintaining social distancing and sanitization norms.

- NTA JEE Mains Exam 2020 on 1st September 2020
- NTA NEET Mains Exam 2020 on 13th September 2020
- IBPS CWE-RRB Exam on 18th,19th and 20th September 2020
- NTA-ICAR Exam on 23rd September 2020
- NTA-UGC-NET Exam on 25th September 2020
- IBPS CWE-RRB Exam on 26th September 2020
- NIELIT CCC Exam on 29th-30th September 2020
- DCSE and DETE Online Exam conducted successfully

NIELIT
CENTRE
AIZAWL

Memorandum of Understanding (MOU) is signed to provide Learning Management System platform and technical supports between NIELIT Aizawl and the following colleges/institutions

- District Institute of Education and Training (DIET Aizawl), on 16th September 2020
- Govt. Hrangbana College, Aizawl on 28th September 2020
- District Institute of Education and Training (DIET Kolasib), on 28th September 2020
- Govt. Mizoram Law College on 30th September 2020

Workshop conducted by NIELIT Aizawl

- Workshop on Online 'Various Online Teaching Method/e-Learning Management System' is conducted by NIELIT Aizawl for the Teaching Faculty of various colleges/institution during the month of September 2020. Workshop jointly organized by NIELIT Aizawl and various colleges/institutions.

Govt. T. Romana College,
Aizawl on 24th-25th September, 2020.

Govt. Hrangbana College,
Aizawl on 22nd September 2020.

(DIET Aizawl),
on 24th September 2020

News from Guwahati Centre

Affiliation for BCA and M.Sc. (Computer Science) courses for NIELIT Guwahati

During August 2020, NIELIT Guwahati has received affiliation for 03 years Bachelors of Computer Application (BCA) and 02 years Master of Science (M.Sc.) in Computer Science (CS) from Assam Science and Technology University, Assam. Initially, the university has sanctioned 40 seats for BCA and 20 seats for M.Sc.(CS) programme. The classes for both the formal courses will start in November 2020.

Invited talks organized by NIELIT Guwahati as a part of its Upskilling staff: Expert Talk series

Date and Title	External Experts	Attended by
29.08.2020- **"Handling Class Imbalance in Classification"**	**Revoti Prasad Bora,** Principal Data Scientist, Lowe's India	Many staffs from Guwahati and its ECs across Assam and staff from Kolkata, Shillong & Chandigarh etc
21-09-2020- **"Cloud technologies and Virtualizations"** (Subtopics were Virtualization, VM placement, Cloud Public: AWS, Private: Open stack, Paas-Container etc.)	**Dr. Esha Barlaskar,** Asst. Prof. at University of Suffolk, UK	Faculty members from many NIELIT Centres attended the Lecture (All EC under Guwahati and Shillong, Kohima, Gorakhpur, Delhi, Lucknow, Ajmer, Aizawl, Gorakhpur, Pasighat, Tezu, Ranchi, and Itanagar etc.

Lectures presented by NIELIT Guwahati members for external organizations

Date and Title/ topic of the Lecture	Event name	Organized by
01.09.2020- Dr. Y. Jayanta Singh, delivered a talk on 'Industry 4.0 and roles of Engineers'	Summer Internship Program for Graduate	Assam Down Town University, Guwahati
09.09.2020- Dr. Y. Jayanta Singh, presented invited talk on "AI-based applications and its benefits for the NE states"	2nd International e-Conference on "Science & Technology for Society", KHUMANG, 9-11 Sept 2020	Manipur Technical University (MTU), Imphal & Kanglei Khongyang Thijinyon (KKT), Imphal

15.09.2020- Dr. Y. Jayanta Singh, presented invited talk on 'AI based Analytical System for early Epidemic detection'	TEQIP-III sponsored Faculty Development Program	Technical University Kota and Anand Int.College & Rajasthan.
02-10-2020- Dr. Y. Jayanta Singh, presented a technical presentation on " Possible Livelihood activities of the Youths using ICT w.r.t Assembling in India	World Student Innovation Summit, Launch Chapter (Global innovation programme for the student's community)	NextGen Innov8 in association with ASMA (Adoption of Social Media in Academia, Pune
22-10-2020- Dr. Y. Jayanta Singh, presented a technical presentation on "Student-centric ICT learning process & continuous assessment (Digital Skillset, Flipped Classroom and Proctored based exams)	Online Refresher course on " Emerging Issues in Information Communication Technology."	Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. It was sponsored by UGC-HRD.

Workshop/ seminar/ online courses organized by NIELIT Guwahati and its ECs in Assam

Title and Nature of the programme	Target group(s)
25-08-2020 to 31-08-2020- **7 Days Blended Training on "Basics of Python Programming"** was jointly organized by Jorhat EC of NIELIT Guwahati and Dept of Statistics, Gauhati University, Guwahati	Faculty members and students of various backgrounds of different universities and colleges of the region.
06-10-2020 to 12-10-2020- **7 Days Blended Training on Moodle** was jointly organized by Jorhat EC of NIELIT Guwahati and North Eastern Hill University, Shillong	Faculty members of North Eastern Hill University, Shillong and other universities and colleges of the region.

NIELIT Guwahati conducted COVID-19 testing for Employees

NIELIT Guwahati conducted COVID-19 testing for all staff on 12[th]August 2020, as a part of Institutional testing. All staff got 'Negative' result.

NIELIT Guwahati organized a webinar on "Start-up Process & Funding / Grant/ schemes for Entrepreneurship /Startups in the NE Region of India.

The expert panel of the webinar, Shri Prabir Kumar Das, Jurisdictional Director, North East & West Bengal, STPI. Dr. M.P. Pillai, Executive Director, NIELIT Calicut, Sri Sanjeev Sharma, Director, WEBx Dr. Y. Jayanta Singh, Director, NIELIT Guwahati & Shillong are seen in the photograph above. Total of 477 participants attended the event which was moderated by Dr. Saurov Mahanta of NIELIT Guwahati.

A webinar on "Start-up Process & Funding" jointly conducted on 04.09.2020 by NIELIT Guwahati & STPI Guwahati to support technology-led innovation in North-Eastern India under OCTANE (through STPI) & Chunauti (through NGIS, STPI). The participants and the experts were welcomed by Dr. Y. Jayanta Singh, Director, NIELIT Guwahati & Shillong. Expert members present on occasion were Shri P.K. Das, Jurisdictional Director, North East & West Bengal, STPI, Dr. M.P. Pillai, Executive Director, NIELIT Calicut & Sri Sanjeev Sharma, Director, WEBx Technologies Pvt. Ltd., Guwahati. Dr. M.P. Pillai, Executive Director, NIELIT Calicut & Chennai delivered his speech on new innovations in IoT and IECT. He stated about the several prototype ready products at his centre. He has encouraged the students and youths to join the startup event to contribute to Self-reliant India. The funding schemes under "OctaNE" and NGIS, were presented by Shri P.K. Das. Apart from the above, Sri Sanjeev Sharma, Director, WEBxTechnologies Pvt. Ltd. encouraged participants to come forward to participate in the startup schemes available in the golden days with the government of India schemes.

Artificial Intelligence of Things

Introduction

Artificial Intelligence of Things (AIoT) is Artificial Intelligence (AI) enabled Internet of Thigs (IoT). A general IoT device deployed with some technology of machine learning (ML) or artificial intelligence, may be said to be an AIoT device and network of such limitedly intelligent devices is called AIoT or the intelligence may lie with the clouds/fogs or access points. An IoT device just has to sense the data, search for nearby access point, send the data to it and finally the data received at gateway device may be sent individually or in aggregation to further processing units like Base Stations, eNodeBs, clouds or fogs while Artificial Intelligence is to provide the device a kind of intelligence to take some of the predefined decisions by its own. In AIoT, the devices and/or the network are made capable of taking some decisions to improve the efficiency and throughput of the overall network, to reduce the congestion and access delay in the network and to maximize the numbers of device that can be connected to the particular access point/gateway in the vicinity. These devices improve human-to-human interaction and enhance data management and analytics. [2][3]

The explosive growth of wireless/IoT devices has brought a challenge to facilitate the "things" with efficient wireless resources. This issue of the massive number of machine type communication (mMTC) things is being included as a part of the undergoing 5G networks. It is envisioned that more sophisticated devices would be connected to form a hyper connected world with the aids of the sixth generation (6G) mobile networks.

In this article, we discuss the frameworks of centralized AI-enabled IoT networks. Key technical challenges are analysed for this network architecture. Deep Reinforcement Learning (DRL)-based strategies and neural networks-based approaches are utilized to efficiently realize the DRL strategies for system procedures such as spectrum access and spectrum sensing.

AI based scheme for centralized IoT Network

As per [5] currently, cloud computing or fog computing based centralized IoT Networks is the key area of interest due to a number of advantages it has. The IoT Networks based on cloud computing are mainly comprised of following three components 1. Radio Remote Head (RRH) Network, 2. Front-haul Network and 3. Baseband Units like clouds/fogs. Whenever an MTC device or IoT user want to use the network for uploading or downloading the data, it needs to initiate the access

procedure. The IoT user establishes connection with RRH network and RRH with front-haul and finally front-haul establishes with clouds. The issue arises when a large number of MTC/IoT users try to access the network in same time slot as it causes collision and congestion in the network which in turn puts detrimental impact on the overall network performance as there is always fixed number of total available preambles and channels and both cannot be modified either by user or by network components. To improve the access probability, neural network based Deep Reinforcement Learning (DRL) may be used.

As per this approach, each MTC/IoT user contains an independent neural network so that it may perform DRL individually. Let the output layer of NN is defined by number of available resource blocks (RB) which can be at most N, it being the total no. of available preambles when no device requires access to the network in particular slot. So if there are N no. of MTC/IoT users and all choose different RB then there is no issue of collision but if there are more users, it becomes impossible to cater all of them without congestion/collision. For DRL, here, the used output neurons may be used to define the action of DRL i.e. the action is represented by the number of RBs used in random access. The input layer here consists of N+1 neurons. The additional one neuron represents the reward neuron. The significant amount of the reward may be given if DRL makes the random access successful otherwise a negative reward may be imposed. If the greedy approach is also applied here then an MTC/IoT user may opt to use multiple RBs, in this case it impacts the reward calculation. It may be calculated by:

$$r = A.1_{success} - \in n$$

Where A represents the value of the reward by one successful access, 1_success becomes 1 for successful access otherwise it is 0, n represents number of RBs used and is adaptation weight. So using this, based on rewards, and RB may be chosen by MTC/IoT user so to avoid the possible collision in the network and to reduce probability of random access congestion which, in long run, improves throughput and efficiency of the network in catering massive number of the devices in an intelligent manner. Figure-1 shows feed forward based neural network (FFNN) for 4 RBs [1].

Apart from this, online training processes may also be used like i.e. of Deep Q-Networks (DQN), Deep Q-Learning (DQL). [4]

Conclusion

Here, in this article, Artificial intelligence in centralized IoT networks has been applied. To cater mMTC/large IoT, the individual devices may choose their transmission parameters intelligently independently (but in limited sense). Reinforcement Learning approach has been used here as MTC/IoT devices may be placed anywhere under the eNodeB, therefore choosing a model based approach looks quite unfeasible. Choosing

an AI technique mainly depends on the environment to be learnt. Therefore, with some other approach, the distributed IoT networks may also be made more efficient.
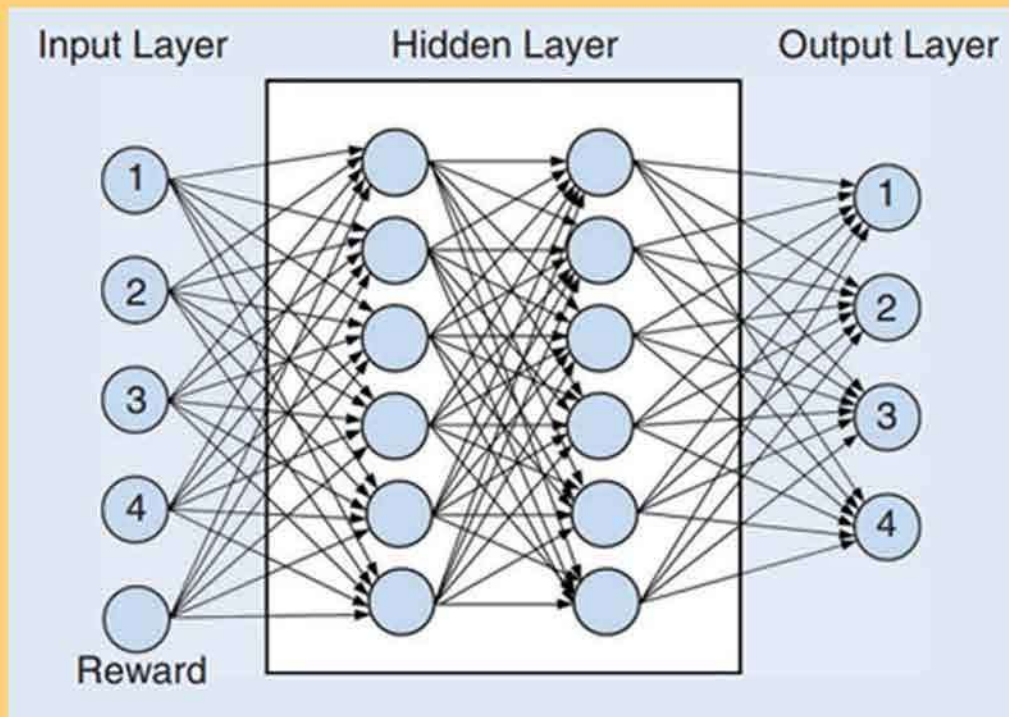

Figure -1: Neural Network based on Feed Forward Approach

Paper References

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कोरोना से बचें

हाथ धोएं बार बार

सही से मास्क पहनें

निभाएं दो गज की दूरी

जब तक दवाई नहीं तब तक ढिलाई नहीं

General COVID 19 Instructions for NIELIT Examinees

NIELIT (रा.इ.सू.प्रौ.सं)

Wearing face mask is mandatory.

SOCIAL DISTANCING
6 Feet

Kindly maintain social distancing and do not crowd the gate.

Must Have: Admit card, ID proof, pen.

ID CARD

Don't share personal items with others like water bottle, glass, pen etc.

Examination Centre

Please approach the gate as per allotted time slot.

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• *Suggestions for improving this newsletter are most welcome*

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