



# 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

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NIELIT Head Quarter, New Delhi

## FROM THE DESK OF THE DIRECTOR GENERAL

Dear Readers,

Technology is being rapidly adopted across the globe to digitally empower the citizens in several fields like education & training, banking services, manufacturing, office workspaces etc. to build a digitally robust infrastructure and to provide easily accessible online services anytime, anywhere.

Emerging technologies like Big Data Analytics, Blockchain, Machine Learning, Deep Learning, Artificial Intelligence, and Internet of Things have lead to Technological Innovation. Big Data Analytics has been helpful in structuring large, unstructured raw data to provide accurate analysis in management decision making and delivering best possible results. Machine Learning has also been recognition, digit helpful in developing applications like image detection, facial recognition, pattern scanning etc. have been useful for security purposes and protection of data.

NIELIT has been offering courses in cutting edge technologies in synchronization with the industry to provide the students with in- depth knowledge and skills required by emerging fields around the globe. It provides comprehensive knowledge about the fundamental principles, methodologies and industry practices. Several training sessions/expert talks are being organized on these subjects by industry experts for providing practical training to students.

I am delighted to share that a new extension centre has been opened at Majuli by NIELIT Guhawati, Assam for facilitating the youth of the region with education in the field of E&ICT. Also, Hon'ble Chief Minister of Himachal Pradesh inaugurated NIELIT Extension Centre in Mandi, H.P.

NIELIT has also signed a MoU with Gautam Buddha University to collaborate & synergize for conducting various short & long term courses in the niche areas of technologies. A 280 hour Advanced Certificate/Diploma course in Big Data Analytics was launched as pilot.

The current issue highlights various activities in first quarter held at various NIELIT Centres across India like capacity building of Government Officials in capacity building and training for Jammu & Kashmir Light Infantry Jawans, National Security Guard Personnel, NIELIT participation in Start-Up Manipur, Digital Innovation and Cyber Security etc.

**Dr. Jaideep Kumar Mishra**



## IMPORTANT HIGHLIGHTS

### INAUGURATION OF NIELIT EXTENSION CENTER, MANDI, HIMACHAL PRADESH



Inauguration by Hon'ble Chief Minister Himachal Pradesh Shri Jai Ram Thakur Ji

NIELIT Extension Center, Mandi was inaugurated on March 5, 2019 by Hon'ble Chief Minister Shri Jai Ram Thakur. The Hon'ble Chief Minister briefed the media and thanked Hon'ble Union Minister (Information Technology and Law & Justice), for extending his full support and cooperation for opening the NIELIT Extension Center at Mandi

### INTERACTION WITH HON'BLE MINISTER OF ELECTRONICS & IT

Ms Sunita Goyle, Director, NIELIT Chandigarh and Shri Deepak Wasan, Director In-charge, NIELIT Ropar attended the inaugural ceremony of Science Communicators Meet at Jalandhar on 5th January, 2019. Shri Ravi Shankar Prasad, Hon'ble Minister of Electronics and Information Technology, Government of India held discussion with NIELIT officers during the Inaugural ceremony.



### DIRECTOR GENERAL REVIEWS NIELIT EXTENSION CENTRE, MAJULI

Dr. Jaideep Kumar Mishra, Director General, NIELIT & Joint Secretary, MeitY visited NIELIT Extension Centre on 31st January and on 1st February, 2019. There during the meeting with Shri Debo Prasad Mishra, Deputy Commissioner, Majuli and Shri Naren Das, ADC, Majuli implementation aspects of Digital Literacy program in Majuli by NIELIT was discussed. DG NIELIT also interacted with the students at NIELIT Extension Centre, Majuli.



DG NIELIT also visited NIELIT Extension Centre, Jorhat and interacted with the students and faculty members of the Centre. He also visited permanent campus site of the Extension Centre at Rowriyah and inspected the ongoing construction works.

### PROMOTION OF DIGITAL PAYMENTS AND DIGITAL MARKETING



Shri Rebati Mohan Das, Hon'ble speaker, Tripura Legislative Assembly inaugurated a half day workshop on "Awareness Event on Promotion of Digital Payments" on March 15, 2019 at Agartala for raising awareness among the students and various stake holders



NIELIT Centre Agartala delivered lectures on "Product Barcoding, Digital Marketing and Digital Payment" at

Bamboo and Cane Development Institute (BCDI), Lichubagan, Agartala on March 16, 2019. The training was organized by National Centre for Design & Product Development (NCDPD), Ministry of Textiles, GOI to encourage participants, handicraft artisans, skill workers & manufacturers to encourage entrepreneurship.







## EXHIBITION - "UJJWAL UTTRAKHAND 2019"



Director-in-Charge, NIELIT Centre, Haridwar, Shri Anurag Kumar Gupta presenting bouquet to, Shri Arvind Pandey, Hon'ble Cabinet Minister of Education, Govt. of Uttarakhand



Team of NIELIT Haridwar briefing the activities to Shri Arvind Pandey, Hon'ble Minister of Education, Govt. of Uttarakhand

NIELIT Centre Haridwar participated in "Ujjwal Uttarakhand 2019" mega exhibition at 'Gadarpur', Udham Singh Nagar, Uttarakhand from 2-4 March, 2019. Hon'ble Cabinet Minister of Education, Government of Uttarakhand, Shri Arvind Pandey inaugurated the event. He appreciated the efforts put in by NIELIT Centre Haridwar for promotion of Digital Literacy programmes in the state of Uttarakhand. NIELIT Haridwar was awarded 2nd prize by Hon'ble MLA, Rudrapur Shri Rajkumar Thukral.

## ACCOLADES FOR NIELIT CENTRE KOHIMA STUDENTS

In order to create and support opportunities for a competitive learning environment, NIELIT Kohima encouraged students to participate in the 10th edition of Annual Management Fest "Zoommax 2019" organised by the School of Management Studies, Nagaland University in association with RamieTech solutions which was held at Kohima during February 13-14, 2019. The two-day inter-college fest saw active participation of BCA and DCSE (Diploma in Computer Science & Engineering) students of NIELIT Kohima competing in various events and panel discussions. The students of NIELIT Kohima held 2nd rank in Business Quiz and Business Plan and won the first position in Mad Ad's.



## NIELIT CENTRE IMPHAL BAGS 3rd PRIZE AT STARTUP INDIA MANIPUR



(left to right) Shri Th. Prameshwor Singh, Executive Director, NIELIT Imphal, Shri Monish Karam, CEO, Jobsenz Pte. Ltd, Singapore & Shri Bijan Hemam, Software Developer, Jobsenz Pte. Ltd.

NIELIT Centre Imphal Incubated Jobsenz Pte. Ltd., mySmartCity platform, winning the 3rd prize at Startup India Manipur Yatra on 13th January, 2018.

## STATE GOVERNMENT REVIEWS NIELIT CENTRE, AGARTALA



Shri Rebati Mohan Das, Hon'ble Speaker, Tripura Legislative Assembly visited NIELIT Agartala campus on January 30, 2019 in order to inspect the facilities existing at the Centre. He also held a meeting with the Director In-charge regarding implementation of various employment oriented skill development programmes in the state of Tripura.



## NIELIT EXTENSION CENTRE, TEZPUR DESIGNED AND DEVELOPED WEBSITE FOR NERIWALM

A website was designed & developed for North Eastern Regional Institute of Water and Land Management (NERIWALM) by NIELIT Extension Centre, Tezpur. The new website has been made in compliance to GIGW guidelines. The website will help the citizens to easily access information regarding training schedule, seminars and other information about the organization. The website is bilingual (English & Hindi). It has been hosted on NIC server, with the domain name "http://neriwalm.gov.in/". NERIWALM is a Society under the Ministry of Water Resources, River Development & Ganga Rejuvenation, Govt. of India.



## TRAINING SUMMARY : APRIL 2018- MARCH 2019

NIELIT plays an important role for skilling of people in the area of Information, Electronics and Communication Technology (ICT).

No. of Candidates skilled/Trained in various courses during April, 2018 to March, 2019 are as follows:

S. No.	Course Category	Number of Candidates Trained/ Skilled
1	Formal Courses (M.Tech/BCA/MCA/3 Years Diploma etc.)	2,364
2	Non-Formal Courses (O/A) level in IT/ Hardware/Multimedia etc. of one year duration or more)	33,190
3	Short Term Courses (includes all short term courses less than one year duration; excludes Digital Literacy Courses)	36,075
4	Digital Literacy Courses (BCC & CCC)	16,34,054
Total		17,05,683

## SECRETARY IT, GOVT. OF J&K REVIEWS ESDM SCHEME AT NIELIT CENTRE SRINAGAR



To review the progress on implementation of Electronics System Design & Manufacturing (ESDM) scheme, Secretary IT, Shri Saugat Biswas chaired a meeting on February 04, 2019 with the Training Partners (TPs) of NIELIT (which is a Key Implementing Agency in J&K). While reviewing the progress of the scheme, Secretary IT emphasized on various aspects of the scheme with regard to providing quality trainings, regular maintenance of attendance in the electronic form, successful placement of the candidates.

ESDM scheme which was recently e-inaugurated by Sh K.K Sharma, Advisor to Hon'ble Governor J&K will provide trainings in 24 National Skills Qualifications Framework (NSQF) aligned courses. Over 2270 candidates would be trained in the current financial year through NIELIT.

The scheme will subsidize 100 per cent course fee for SC, ST and EWS candidates and 75 per cent for the rest, focusing on students and unemployed youth at 8th-10th standard onwards, ITI, diploma, engineering graduates, non-engineering graduates, with an aim of increasing their employability to work in manufacturing and service support sector.

Besides 37 Training Partners (TPs) of NIELIT, Additional Secretary, Information Technology Department; Deputy Chief Executive Officer (DCEO), JaKeGA; Director NIELIT J&K; Controlling Officer, NIELIT Srinagar and ESDM team of JaKeGA also attended the meeting through video conference from Jammu.





## EXECUTIVE COMMITTEE MEETINGS

**NIELIT Centre Kolkata :** The 19th EC Meeting of NIELIT Kolkata was held on 25.03.2019 at the JU Campus office of the Centre. Dr. Y. J. Singh, Chairperson & Director, NIELIT Kolkata, Prof Chandan Mazumdar, Dept of Computer Science & Engineering, Jadavpur University, Shri Avijit Bhattacharyya, Consultant, TCS, Shri A Das, Member Secretary & Addl. Director (F&A), NIELIT, Kolkata and other senior officers of NIELIT Kolkata were present in the meeting. Shri Janak Raj, Registrar, NIELIT and Ms. Chaman Sharma, Deputy Director (Finance), NIELIT were also attended in the meeting through video conferencing.



**NIELIT Centre Chandigarh:** 19th meeting of Executive Committee (EC) of NIELIT Chandigarh was held on 28th March, 2019 under the chairmanship of Ms Sunita Goyle, Director. Mr T S Bawa, Dir-Incharge, Kurukshetra, Mr Deepak Wasan, Dir-Incharge, Ropar, Dr J S Sahambi, Elec. Engg, IIT, Ropar, member from Directorate of Governance Reforms, Punjab attended the meeting and Sh. Himanish Roy, CFO, NIELIT HQ, participated in the meeting through video conferencing.

## CAREER CONCLAVE / WORKSHOP / EXHIBITION

### SARPANCH SAMAN SAMAROH



Sarpanch Saman Samaroh was organized at IET Bhaddal Technical Campus Ropar on February 07, 2019. NIELIT Centre Ropar officials attended the function. Sh Deepak Wasan, Director In-Charge NIELIT Ropar addressed Sarpanchs and other attendees in order to generate awareness about NIELIT Ropar and its courses.

### WOMEN EMPOWERMENT

Shri Piyush Srivastava, Scientist-C and Shri Mridul Pachani, STO NIELIT Guwahati jointly delivered a 3-hour session at National Power Training Institute (NPTI), Guwahati on 04-03-2019 on Cyber Security Objectives, Key challenges, Requirement and Components of Cyber Security strategy. Altogether 42 Assistant Managers/Jr. Managers (IT) of APDCL (Assam Power Distribution Company Limited) attended the program. This program was conducted as per the request received from NPTI, Guwahati.



### TALK ON CAREER BUILDING

A special Talk on Career Building was organized at NIELIT Centre Haridwar for its students wherein Dr. Alok Kumar Gupta, Principal, Chinmay Degree College, Haridwar was the Chief Guest.



Dr. Gupta addressed the students and shared his thoughts about career choices. Director-in-charge, Shri Anurag Kumar Gupta, also addressed the students and informed about the upcoming areas and opportunities in the field of IECT and explained the role of NIELIT in career building of the students through the certification programmes which have a wide recognition in government as well as private sectors.

### STATE LEVEL CAREER CONCLAVE

NIELIT Centre, New Delhi, participated in the "State level Career Conclave"

organized by Directorate of Education, GNCT Delhi, from January 28-31, 2019 in Thyagraj Stadium, New Delhi. The aim of the event was to provide a platform to the students of all Govt. Schools of Delhi to explore various career options in technical, higher education, vocational and skill sectors etc.



Huge rush of students can be seen at the NIELIT Exhibit during the 04 days career conclave

A team of training section of NIELIT Delhi Centre, provided information to students about all NIELIT Training Programs including Digital literacy courses and non-formal courses that can help them in their future prospect. Approximately 32 thousand students participated in the event.



## WORKSHOP ON 'DIGITAL PAYMENT AWARENESS'



Under directive from MeitY, NIELIT Centre Guwahati organised a workshop for Promotion of Digital Payments at Guwahati on 27th of February, 2019 at NEDFi Convention Centre, Guwahati. IT Secretary, Government of Assam, Shri Vinod Seshan, IAS inaugurated the event in the presence of Prof. S. Nandi, IIT Guwahati; Shri Devajit Khound, DDG, UIDAI; Shri P.K. Das, Director, STPI, Guwahati; Smt. Suchitra Pyarelal, SIO, NIC, Assam and Sri K. Baruah, Director, NIELIT Guwahati. A total of 118 Govt. officials, entrepreneurs and students attended the event.

NIELIT Centre Aizawl organized a "Workshop on Digital Payment" in collaboration with the state wide Women Association "Mizo Hmeichhe Insuihkhawm Pawl" (MHIP) at Hawla Auditorium on March 15, 2019. About 115 participants from Merchants, Members of MHIP and Govt. employees attended the training. In the Inaugural function, Smt. Saipuii, President, MHIP and Shri N. Debachandra Singh, Director-in charge of NIELIT Aizawl, delivered a talk on cashless transaction and importance of Digital Payment. Resource person from NIELIT Aizawl and SBI Bawngkawn Branch conducted technical training successfully followed by hands-on-practice.



Shri N. Debachandra Singh giving inauguration speech

## INVESTITURE CEREMONY AT NIELIT CENTRE HARIDWAR

An investiture ceremony was conducted by NIELIT Centre Haridwar for the 'O' and 'A' level students. The Registrar of Gurukul Kangri University, Haridwar, Prof. Dinesh Bhatt addressed the students as the Chief Guest and wished for their bright future. Shri Anurag Kumar Gupta, Director-in-charge, NIELIT Centre Haridwar explained about the various career opportunities after completion of NIELIT's non-formal courses. On this occasion, Dr. Sanjay Kumar, HOD (Applied Sciences) and Shri Ajit Singh, Librarian, Government Polytechnic, Haridwar were also present and discussed about various career opportunities in the area of Information Technology and allied fields.



Prof. Dinesh Bhatt, Registrar, Gurukul Kangri University sharing his thought with the students.



allied fields.

## A TALK ON CAREER AFTER NIELIT



An inspirational session on the theme titled 'A Talk on Your Career After NIELIT' by Shri Monish Karam, CEO, Jobsenz Pte. Ltd, Singapore was held on January 24, 2019 at the Seminar Hall of NIELIT Imphal. The session was attended by 250 participants including staff and students of NIELIT Imphal.







## NATIONAL VOTERS DAY 2019

NIELIT Centre Imphal participated in the 9th National Voters' Day 2019 celebration with the theme "No Voter To Be Left Behind" at City Convention Centre, Imphal on 25th January, 2019 with a total of 300 students participating in order to spread awareness about the necessity of voting and to encourage young generation towards the voting rights.



NIELIT Imphal Staff and Students at the 9th National Voters' Day 2019 Celebration



Further, a Workshop on Electronic Voting Machine (EVM) & Voter Verifiable Paper Audit Trail (VVPAT) was held at NIELIT Imphal on February 28, 2019, which was organized by the Office of the Chief Electoral Officer, Manipur with the theme on "No Voter to Be Left Behind". Ms. Juli Daryal Anal, MCS, Deputy Secretary, State Election Commission carried on the presentation session. Shri Th. Manoranjan Singh, MCS, OSD and Shri U. Sunil, DEO of State Election Commission also attended the session.

## STARTUP INDIA YATRA INITIATIVE AT NORTH EAST

An initiative of the Department of Industrial Policy and Promotion (DIPP), Startup Yatra aims to promote entrepreneurship at a remote level by reaching every state.

This initiative is being driven to search for entrepreneurial talent and provide them a platform to pursue their aspirations. The Startup India Manipur Yatra, Van Stop was held at NIELIT Imphal, Akampat on January 07, 2018 with a total of 43 registrations including both staffs and students



Manipur

## NIELIT CENTRE KOHIMA PARTICIPATES IN TECHNOLOGICAL WORKSHOP



Making sporadic efforts to give students concrete experiences through field trips, laboratories, and such programmes thus expanding opportunities for learning and exposure outside of the institute, the DCSE students of NIELIT Kohima participated in the Technological Workshop "TechBlitz", a first of its kind organized by Kaziranga University, Assam on February 25, 2019. The fun-filled technological extravaganza was attended by 700 students from schools across Assam and the North-East.

## WORKSHOP ON BIOINFORMATICS



NIELIT Centre Guwahati participated in the Department of Biotechnology, Govt. of India sponsored workshop on Bioinformatics at Mangaldoi College, Mangaldoi, Assam on February 16, 2019. Dr. Saurov Mahanta, STO, NIELIT Guwahati delivered the Key note address as well as presented the talk on the first technical session of the workshop on the topic 'Application of ICT tools in Life Sciences'.



of NIELIT Centre Imphal.

Students of NIELIT Kohima participated in the Startup India Nagaland Yatra organised by Industries & Commerce Department, Nagaland. A Van Stop was

organised at NIELIT Kohima on February 19, 2019 following the launching of the Startup India Mobile Van and Boot camps to spread awareness about Startup India and Nagaland State Government policies and opportunities to pitch an idea and get selected for the acceleration programme.



Nagaland



## DIGITAL INNOVATION AND CYBER SECURITY SUMMIT

NIELIT officials attended the "Digital Innovation and Cybersecurity Summit" in Gurugram, Haryana on January 16, 2019 organised by Department of Information Technology and Electronics, Government of Haryana. The summit focused on exchange of ideas, viewpoints, regarding the need and ways to be secure from cyber attacks, to create a safe ecosystem and highlight the best practices from across the country. Dr Manish Arora and Ms Anita Budhiraja of NIELIT Chandigarh attended the event.



## MEETING WITH INDUSTRY PLAYERS

During 17-18 February 2019, NIELIT Centre Kolkata was visited by Shri Vinay Yeolekar, founder (Vasundhara IT Pvt Ltd, Pune) for the discussion on "Possible Joint Projects of IoT and Automation" along with Shri K.L Saha, Chief General Manager, Bridge & Roof Co. (India) Ltd. and Shri Bhaskar Ghosh, Chief Engineer, PWD-GTA, West Bengal.



## e-WASTE WORKSHOPS

An e-Waste Workshop conducted for 34 students of Directorate General of Resettlement (DGR) batch. Another workshop on e-Waste was conducted for



approximately 35 students of Government Model Senior Secondary School (GMSSS). Further, a workshop was also



conducted at Government Senior Secondary School, Chandigarh for the students of class XII. The participants were made aware about the e-Waste, its hazards, its disposal

methods and the e-dustbins available in various locations in Chandigarh.

## स्वच्छता पखवाड़ा समिति द्वारा निरीक्षण

इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी मंत्रालय की ओर से स्वच्छता पखवाड़ा समिति के सदस्यों की एक समिति द्वारा दिनांक 15 फरवरी 2019 को नाईलिट दिल्ली केंद्र का स्वच्छता संबंधी निरीक्षण किया



गया। दिल्ली केंद्र में पहुँचने पर संयुक्त निदेशक (तकनीकी) श्रीमती शीतल चोपड़ा एवं श्री अरविंद रावत, उपनिदेशक (वित्त एवं प्रशासन) ने संस्थान के कुछ कर्मचारियों सहित समिति का स्वागत किया। नाईलिट दिल्ली केंद्र द्वारा वर्ष के दौरान स्वच्छता के लिए जो प्रयास किए गए उनकी जानकारी समिति को दी गई। प्रमाण स्वरूप पावर प्वाइंट प्रस्तुति द्वारा समिति सदस्यों को विभिन्न अवसरों के फोटो दिखाये गए तथा संस्थान में आयोजित प्रतियोगिताओं के पोस्टर भी प्रस्तुत किए गए। इसके पश्चात समिति सदस्यों ने पूरे केंद्र का दौरा किया तथा स्वच्छता की स्थिति पर संतोष व्यक्त किया।

समिति द्वारा इस संबंध में कुछ दिशा निदेश भी दिये गए। इस पर अधिकारियों द्वारा समिति को आश्वासन दिया गया की सभी निदेशों का अनुपालन सुनिश्चित किया जाएगा तथा स्वच्छता मिशन को निरंतर वरीयता आधार पर जारी रखा जाएगा।

## CAREER COUNSELLING AND VOCATIONAL GUIDANCE

Career Counselling and Vocational Guidance Programmes were organized by NIELIT Extension Centre Jorhat at different Educational Institutes in Jorhat to provide information to students



on various skills to improve their employability. These programmes were conducted at HRH The Prince Of Wales Institute of Engineering and Technology, Jorhat; Kakojan College, Kakojan; DCB Girls College, Jorhat; Jorhat College, Jorhat and Charingia High School, Jorhat etc.

The District Employment Exchange, Jorhat (Model Career Centre) and University Employment Information and



Guidance Bureau (Assam Agriculture University, Jorhat) under the initiative of Directorate of Employment & Craftsmen Training, Assam, and Skilled, Employment & Entrepreneurship Department, Govt of Assam organised the programme.

## INTERACTIVE SESSION FOR PLACEMENT TRAINING

With a view to improve the employability of young people through TCS-BPS (Business Process Services) supported Affirmative Action program and to strengthen the employability of NIELIT students, an interactive session was organized on 20.03.2019 at NIELIT Kolkata. Shri Puthumai A. Nazarene, Team Leader – Affirmative Action, TCS spoke about "20 days rigorous free of cost training" that will be provided to the SC/ST and extremely economically backward candidates from Minority and other social groups. A total of 87 candidates attended the interactive session.







## RESEARCH & DEVELOPMENT PROJECTS

### MEDICAL ELECTRONICS LAB AT NIELIT EXTENSION CENTRE, SILCHAR

Silchar Extension Centre of NIELIT Guwahati is executing a MeitY sponsored project on “Set up of Medical Electronics Laboratory”. Under this project the Govt./Non-government medical institutions/nursing homes shall be getting consultancy from NIELIT EC at Silchar for repair & maintenance works in medical equipments. Candidates will also be trained as Lab Technicians targeting to take up service & maintenance jobs/works in various medical institutions. A 200 hrs duration course has been started where seven (07) candidates have taken admission in the 1st batch. The training is currently under progress.

Apart from the in house faculties, experts from Silchar Medical College and other nearby Hospitals are also involved in providing training in some key areas. In this regard recently Dr. Jayanta Kumar Sarkar, Associate Professor, Department of Anatomy, SMCH conducted special classes on Anatomy and Imaging Techniques for the trainees. The Silchar EC of NIELIT plans to commence a 6(six) months NSQF aligned course in Bio Medical Servicing in the domain soon.



Dr J.K. Sarkar delivering lecture on Human Anatomy

## INTERNAL CAPACITY BUILDING

### ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

NIELIT Centre Chandigarh conducted a lecture on Artificial Intelligence, Machine Learning and Deep Learning for the technical staff of its centre. The two hour session was delivered by Ms. Anita Budhiraja, Joint Director, NIELIT Centre Chandigarh to 16 senior staff members of the Centre.



### NIELIT CENTRE CHANDIGARH OPERATING FROM MOHALI IS NOW AT ROPAR, PUNJAB

The staff along with infrastructure of NIELIT Centre Chandigarh has shifted to NIELIT's permanent campus at Birla Farms, Bada Phull, Ropar (Roopnagar). All the activities related to software Development, Processing, Billing and training have commenced and the Centre is running in full swing.



## CAPACITY BUILDING FOR GOVERNMENT EMPLOYEES

### TRAINING ON IT SKILLS FOR ASSAM POLICE

NIELIT Centre Guwahati along with its Extension Centers at Dibrugarh, Jorhat, Kokrajhar, Silchar and Tezpur successfully conducted training program on “Course on Computer Concepts” (CCC) for 245 of personnel from Assam Police. The training is sponsored by the Office of Inspector General of Police cum Project Director of Assam Police Cyberdome Projects, Govt. of Assam.

### CAPACITY BUILDING FOR BROADCAST ENGINEERS

NIELIT Centre New Delhi conducted a training program on “Handling Multimedia using HTML5 and Google Web Designer” for broadcast engineers of All India Radio and Doordarshan under the aegis of National Academy of Broadcasting and Multimedia (NABM) at their campus during February 18-22, 2019 at NABM Campus.





# NIELIT CENT

**C**entre was established in the year 1989 (as erstwhile 'Centre for Electronic Design and Technology' - CEDT) with the support of UNDP, MeitY (then DoE) & Government of Kerala. The present infrastructure is developed in 25 Acre campus and houses state of the art facilities, smart class rooms, IEEE online access, NKN connectivity, Mini data Centre, Faculty guest room & 24x7 WiFi facility to students in lush green scenic ambience.

Laboratories are fully equipped with the latest systems and development tools in the area of Embedded Systems, IoT, VLSI, Information Technology, Product Design and Process Control & Instrumentation. Large collections of reference books in the above areas are accessible to the trainees from the Centre's library. The fully furnished NIELIT Calicut hostels (ladies & men's) in the campus can accommodate around 250 students.

In addition to funded R & D projects, the Centre successfully executed many software development and electronics design projects for reputed organizations like TISCO, BPL, BPL Telecom, KEL, Kerala Feeds, KCMML Ltd., MTAB, etc.

Completed its Silver Jubilee in 2014, the Centre is making brilliant inroads in the field of Education, Skill training & Product development. The unique Kerala style architecture of the buildings, its proximity to world class institutions like NIT & IIM, makes it one of the best NIELIT Centres in the country.

## AREAS OF EXCELLENCE

- Embedded Systems & IOT Applications
- VLSI / ASIC Design & Verification
- Process Control & Instrumentation
- Cloud Computing & Information Security
- Big Data Analytics & AI

Executive Director : Dr. M P Pillai

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## COURSES OFFERED

### SHORT TERM COURSES :

#### Advanced PG Diploma in

- Electronic Product Design and Manufacturing

#### PG Diploma in

- Embedded System Design
- VLSI & Embedded Hardware
- Internet of Things (IoT) & AI for Industry 4.0
- Industrial Automation System Design
- Software Technology
- Information Technology
- Cloud Computing

#### Advanced Diploma in

- Big Data Analytics
- Artificial Intelligence
- Android Application Development
- Information System Security
- PLC/SCADA/DCS Engineer

### LONG TERM COURSES :

#### Master of Technology (M.Tech) in

- Embedded Systems ( Since 2005)
  - Electronics Design Technology (Since 2001)
  - VLSI and Embedded Systems ( Since 2017)
- (Jointly with DIAT-DRDO, Pune)

#### PhD in Electronics (Calicut University)

- NIELIT CHM 'O' Level & NIELIT 'O' Level

#### Other programs

- Corporate training for industries / R&D institutes.
- Faculty Development Programs.
- Customized Internships & Student projects
- Workshops & Seminars jointly with IEEE / IETE

### Centre's Recruiters: In-House Programs



### Notable Collaborations

- IIT Madras (Biomedical Engg) for Research and Academic Collaboration.
- Maker Village, Govt of Kerala, for Collaboration in Up-Skilling and Technology based Entrepreneur Development Programs.
- VIT, Vellore to conduct courses under All India PG Diploma scheme.
- IT Mission Kerala on Capacity building in advanced computing for Government of Kerala employees.
- Defence Institute of Advanced technologies Pune under DRDO, academic collaborations, projects and joint M Tech program on VLSI.
- Calicut University Kerala for academic collaborations & PhD in Electronics.
- Intel India Higher education – Internet of Things (IoT) Laboratory support.





## HIGHLIGHTS & ACHIEVEMENTS

- R & D project on developing a Medical ultra sound system with PNDT compliance, first of its kind in India under the Make in India initiative supported by MeitY, lab prototype demonstrated.
- Successfully completed the tape out of the Array Signal Processor, at 'Semi-Conductor Laboratory' (SCL) Mohali. The processor is an ASIC targeting under water acoustic camera / SONAR applications under SMDP-C2SD project funded by MeitY.
- Commercialized over 60 product technologies & automation for SSIs as well as for government agencies since its inception.
- Participating institute under Information Security Education & Awareness (ISEA-II) supported by MeitY.
- First "Model Career Centre" in India with the support of DGE, GoI was set up in the Campus during 2015. Organized number of mega job fairs across Kerala. More than 3400 candidates were registered in the NCS portal at MCC, NIELIT Calicut.
- Designed & Developed temple automation software and implemented in 30 temples under Malabar Devasam Kerala.
- 100% enrollment in M.Tech courses and placement.
- Capacity building in ICT and Social Media for Kerala Govt. Agricultural Officers, sponsored by State Agricultural management and Training Institute (SAMETI), Kerala through blended mode.
- Two proposal on R & D work under CARS scheme being considered for funding by NPOL, DRDO Kochi.
- Organized National Conference on "VLSI, Computing, Signal and Image Processing Applications" during 15th June 2017.
- Created state-of-the-art Ultra sound Research platform (Vantage 64 System from USA). With this facility, Calicut centre joins the elite club of Medical Ultrasound Research. This facility is second of this kind in India.
- Established facility on Photometric Test System to measures the electrical, luminous and color co-ordinate values of LED Street Lights. Through this facility, Manufacturers and start-ups can get their products tested.
- Providing training to around 1000 candidates through in-house programs annually.

## SIMPLIFYING KNOWLEDGE THROUGH CONTINUOUS EFFORT





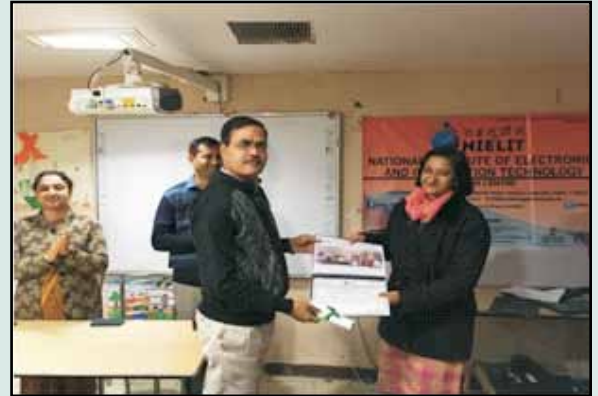


## TRAINING FOR DIRECTORATE GENERAL OF RESETTLEMENT(DGR)



The Directorate General Resettlement (DGR) is an inter service organization functioning directly under Department of Ex-serviceman Welfare, Ministry of Defence. DGR assist Ex-Serviceman to train and acquire additional skills and facilitate their resettlement through a second career.

NIELIT Centre Delhi centre has successfully conducted two training programmes for JCOs/ORs, sponsored by Directorate General Resettlement. A total of 39 officials of Army, Navy and Air Force participated in the training and had a good



learning experience on PC Hardware and Components, Architecture, Networking Devices etc. Online examination and practicals were conducted successfully. A Certificate course of Certified Multimedia Developer for JCOs/ORs, was also conducted in which 36 officials of Army, Navy and Air Force participated and learned various 2D/3D Editing and Animation Tools. On February 12, 2019, a certificate distribution ceremony was held in which Shri Shameem Khan, Director In-charge awarded Certificates to all officials and felicitated them for their successful completion of training.

## TRAINING FOR NATIONAL SECURITY GUARD PERSONNEL



NIELIT Centre New Delhi conducted a One Week Skilling program for NSG personnel on Computer Hardware and Networking from 7th – 11th January 2019 at NIELIT HQ. The training program was designed to impart training on the nuances of networking concepts & management and computer hardware.

## TRAINING FOR JAMMU AND KASHMIR LIGHT INFANTRY(JKALI) JAWANS

NIELIT Srinagar conducted In-house training for the Jawans of (Jammu and Kashmir Light Infantry) JKALI for CCNA and Basic Course in Computers in February, 2019.



NIELIT Centre Chandigarh has conducted the NSQF aligned course on Certified Multimedia Developer 26 officials from Army, Navy, Air Force sponsored by Directorate General of Resettlement (DGR) New Delhi during March 2019. At the end of the training, certificates were distributed to the students by Ms Sunita Goyle, Director.



## .NET TECHNOLOGIES FOR HIMACHAL PRADESH GOVT. EMPLOYEES

NIELIT Centre Shimla conducted training on High-end Dot Net Technologies and Sql Server 2012 to officials of Treasuries & Lotteries Department, Govt. of Himachal Pradesh from January 7 to March 9, 2019. The courses were well received by the participants and all the queries of the participants related to in-house development of "e-Pension" project of the Department were responded.







## GREEN TECHNOLOGY

NIELIT Centre Imphal, being a certified trainer of Skill Council for Green Jobs (SCGJ) & SUORABHATA Team imparted training on 'Rooftop Solar Grid' to the Utility Engineers of Mizoram State during 27-28, February, 2019 at NIELIT Aizawl. Shri RK Naojinglen Meitei, STO, NIELIT Imphal presented a session on Grid connected



Shri RK Naojinglen Meitei, STO, NIELIT Imphal presenting a session on Grid connected Solar PV

Solar PV, Shri RK Tombisana Singh, Scientist-C, NIELIT Imphal presented a session on Grid Connectivity Inspection Procedure and Site Feasibility and Technical due Diligence and Shri A. Johnson Singh, Guest Faculty, NIELIT Imphal delivered on Energy Generation Calculation in the Two Days Training Programme.

## ISEA TRAINING



**FOR CISF OFFICIALS:** A one Day Awareness workshop on information Security under ISEA project of MeitY was conducted for CISF officials by NIELIT Patna at CISF Patna HQ on February 22, 2019.



**FOR SBI OFFICIALS** NIELIT Centre Patna Conducted 3 Days Training Program on Information Security for the Staff of SBI Maurya Lok Branch of Patna under ISEA Project.

## CYBER SHIKSHAA

NIELIT Centre Patna is providing training to girls under the Project Cyber Shiksha. The Project Cyber Shiksha is launched by DSCI and sponsored by MICROSOFT as a part of their CSR activity. The project focuses to train the female candidates in Cyber Security and Cyber Forensics.



## SKILL DEVELOPMENT PROGRAMMES

### SKILLING OF YOUTH OF WEST BENGAL



Solar Cell Installation on 02.01.2019 at Bolpur (IT Park)



Counseling-cum-workshop session organized at Kharagpur (IT Park)



Selection interview conducted during 18-19th March 2019 at Barjora (IT Park)

NIELIT Centre Kolkata has signed a MoU with WBEIDC (West Bengal Electronics Industry Development Corporation Limited) for skilling youths in and around six Information Technology (IT) parks established by Department of IT&E, Government of West Bengal. Modules in 6 IT parks have already been booked for training of 54000 in 3 years. Some glimpses of training centres in tier2/tier3 cities in different districts of West Bengal:



## NIELIT EXTENSION CENTRE LEH STARTED BCA COURSE



NIELIT Centre J&K started 3 year BCA degree Program (Bachelor of Computer Applications) in collaboration with University of Kashmir for the Session 2019 at NIELIT Sub-Centre Leh.

## INDUSTRIAL TRAINING

Industrial Training on "Information Security and Cyber Law"; "Java Programming" and "AutoCAD" was started at NIELIT Centre Agartala on January 07, 2019. Total 54 students joined the training course.



## SKILL DEVELOPMENT IN REMOTE AREAS

Skill Development Training on various courses of NIELIT (viz. IT 'O' Level, BCC, CCC, CCC+, Office Automation, Financial Accounting using Tally, DTP, Information Security, Web Development using PHP) started at Ambedkar College, Fatikroy, Unakoti District, Tripura on February 27, 2019. Dr. Subrata Sharma, Principal In-Charge, Ambedkar College, inaugurated the session and thanked NIELIT for the initiative to start skill development courses in such a College of far flung area. Shri Binoy Das, Technical Officer briefed about NIELIT and the courses. Nearly 60 participants attended the session.



## INTERNET OF THINGS (IoT)

A full day one week Refresher Course on Internet of Things (IoT) was conducted by NIELIT Centre Chandigarh on January 04, 2019. The course was launched for the first time to enhance the skills of the students in their winter break. Students from Thapar University; Punjab University and Institute of Nano Science and Technology (INST) Mohali attended the course.



## SPECIAL TRAINING BIO-INFORMATICS



NIELIT Centre Guwahati organised two short term special courses for a duration of 5 days in Bio-informatics covering various topics in Bioinformatics for Degree level College students of Life Science streams. The 1st programme was conducted from February 15, 2019 for 14 students of Arya Vidyapeeth College, Guwahati and the 2nd programme was conducted from February 28, 2019 for 28(twenty eight) students of Handique Girls' College, Guwahati. Director, NIELIT Guwahati, Sri K. Baruah, awarded the certificates to both the groups in the valedictory sessions.



## TRAINING FOR GIRL STUDENTS OF ITI

A on Job training/skill development course was conducted by NIELIT Centre Chandigarh in March, 2019 for 51 girl students of ITI (Industrial Training Institute (Women), Mohali. The girls were from economically weaker sections and trained on Excel, Powerpoint and Internet.







## MoUs/AGREEMENTS

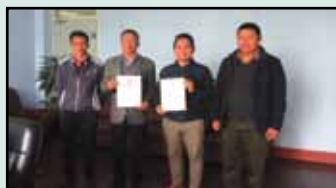
### MoU WITH GAUTAM BUDDHA UNIVERSITY



NIELIT Centre Delhi and Gautam Buddha University (GBU), Greater Noida signed a MoU to collaborate and create a synergy for conducting various short & long term courses in the niche areas of technologies. The MoU was signed between Prof. Bhagwati Prakash Sharma, Vice Chancellor, GBU and Dr. Jaideep Kumar Mishra, Director General, NIELIT on March 13, 2019. Both the institutions will use strengths and experiences of each other in order to make it a fruitful collaboration. To begin with, a course titled Advance Certificate/ Diploma course in Big Data Analytics of duration 280 Hours would be launched.

### MoU WITH NAGALAND GOVERNMENT

NIELIT Centre Kohima signed extension of Agreement with Government Polytechnic Kohima for imparting NIELIT IT Courses to its students on 22nd February, 2019.



### MoU FOR PROMOTING MEDICAL ELECTRONICS



The exchanging of the MoU copies upon execution on 20th February 2019 at the Dr H. Gordon Robert Hospital

MoU has been signed between NIELIT Centre Shillong and Dr. H. Gordon Robert Hospital, Shillong for providing consultancy services regarding Testing, Calibration, Repairing and Maintenance of a few hospital equipments by NIELIT Shillong. Consultancy services for Medical Equipment as envisaged in the MoU is part of the Medical Electronics Project sponsored by the R&D in Medical Electronics and Health Informatics Division of MeitY which is being implemented by NIELIT Shillong in Meghalaya.

### MoUs WITH BIHAR GOVERNMENT

- (i) Agreement for the Training on “PES, GPMS, and all other State Specific Apps. & WAP” has been signed on February 25, 2019 between NIELIT Centre Patna and Bihar Gram Swaraj Yojna Society, Department of Panchayati Raj, Govt. of Bihar.
- (ii) Agreement for the Training on “Skill Development Programme” Sponsored by Department of Industry, Govt. of Bihar, has been signed on 6th March, 2019 between NIELIT Patna and Department of Industry, Govt. of Bihar.

### MOUs WITH COLLEGES IN ASSAM

NIELIT Centre Guwahati signed MoU with a number of Colleges from Guwahati and nearby areas with the understanding that the Colleges will provide their students from SC/ST community generally for various IT training programmes at the NIELIT Centre & Extension Centres in Assam. General candidates also can take admission on payment of prescribed fees while for SC/ST students the training is free under SC SP TSP scheme of the Govt. of India being implemented through MeitY, Govt. of India.

Many more colleges have expressed their willingness to sign MoU with NIELIT Centre Guwahati and participate in this programme. The following 4(four) colleges have recently signed MoU with NIELIT Centre Guwahati.

- ✿ A MoU was signed with Handique Girls' College, Guwahati on 5.02.2019 with the purpose of providing free training in NSQF aligned IT courses of NIELIT for SC/ST students to be trained in NIELIT Guwahati Centre.



- ✿ A MoU was signed with Arya Vidyapeeth College, Guwahati on 12.02.2019 with the purpose of providing free training in NSQF aligned IT courses of NIELIT for SC/ST students to be trained in NIELIT Guwahati Centre.



- ✿ A MoU was signed with Jawaharlal Nehru College, Boko, Kamrup, Assam on 05.03.2019 with the purpose of providing starting a NIELIT Guwahati Study centre by creating a PC lab of 20 PCs at J. N. College, Boko premises and to train the students of the college as well as from the nearby areas in various NIELIT Courses.



- ✿ A MoU was signed with Guwahati College, Guwahati on 13.03.2019 with the purpose of providing free training in NSQF aligned IT courses of NIELIT for SC/ST students to be trained in NIELIT Guwahati Centre.





## RECRUITMENT FOR AIR FORCE

### COMMON ADMISSION TEST



Students are in queue for verification



Students registering for the Examination

Common Admission Test (AFCAT), an online exam for Air Force was conducted successfully on February 16, 2019 at NIELIT Centre Imphal. Many students appeared for the exam.



Candidates Reporting for STAR online exam at NIELIT Imphal



Registration of candidates for STAR online exam at NIELIT Imphal

Online exam of Scheduled Test for Airmen Recruitment (STAR) for air force was conducted at NIELIT Centre Imphal during March 16-17, 2019.

## PLACEMENTS

### MEGA JOB FAIR

NIELIT Centre Agartala in association with Directorate of Employment Services & Manpower Planning, Govt. of Tripura attended the Mega Job-Fair to aware the job seekers about the different schemes of NIELIT on March 07, 2019 at Dr. B. R. Ambedkar High School, Agartala.



### PLACEMENT DRIVE FOR MULTIMEDIA STUDENTS

NIELIT Centre Kolkata organised a Placement Interview for its multimedia students on 12th March 2019 at its JU Campus office by M/s Ssoftoons Entertainment Media LLP for enhancing the scope of jobs in Multimedia sector. Total 15 students appeared in the Interview.



## EMPLOYEE CORNER

### ICDMAI 2019

A research paper of Shri Kalyan Baital, Scientist-C, NIELIT Centre Kolkata on "An approach: Applicability of Existing Heterogeneous Multicore Real-Time Task Scheduling in Commercially Available Heterogeneous Multicore Systems" has been accepted for presentation in the 3rd International Conference on Data Management, Analytics and Innovation (ICDMAI-2019), Kuala Lumpur, Malaysia held during 18-20 January 2019. Subsequently the paper was presented in the conference and the presented paper will be published in Springer Proceedings (AISC Series).



### SUCCESSFUL COMPLETION OF PH. D. BY EMPLOYEE OF NIELIT CENTRE GUWAHATI

Sri Bipul Roy, Scientist-C/ Centre-In-charge of NIELIT Kokrajhar Extension Centre under NIELIT Centre Guwahati has been awarded the degree of 'Doctor of Philosophy' (Ph.D) by Assam University, Silchar in the Month December, 2018 for his thesis entitled "Parsing and Part-of-Speech Tagging for Assamese Texts". The degree is conferred to him in the 17th Convocation of the University held on 14th March, 2019. He carried out his research under the supervision of 'Prof. Bipul Syam Purkayastha' of the Department of Computer Science, Assam University.

### FAREWELLS

**Imphal Centre:** A farewell was organized by the staff of NIELIT Imphal in respect of Shri H. Naran Singh, Driver Gr. II on retiring of his service from NIELIT, Imphal on 28th February, 2019



**Chandigarh Centre :** A warm farewell was also organized for the following employees

1. Ms. Veena, DEO 'F' on 28.02.2019
2. Ms. Sandeep Sood, DEO 'F' on 31.03.2019
3. Ms. Anita Lamba, DEO 'F' on 31.03.2019

*We at NIELIT take this opportunity to wish them a happy and prosperous life ahead!*





## CULTURAL ACTIVITIES

### ANNUAL STUDENT FEST – RENDEZEVOUS 2.0

NIELIT Centre Agartala Annual Student Fest 'Rendezvous 2.0' was inaugurated by Shri Ratan Chakraborty, Hon'ble Member of Legislative Assembly in presence of Dr. Virat Chirania, International Art of Living Faculty, TEDx Speaker & Life Coach on February 12, 2019. Director In-charge of the Centre welcomed all the guests followed by the cultural events. The grand event went on for five days witnessing power-packed live performances and an array of cultural, technical and sports events. On the last day, i.e. on February 15, 2019, the Annual Prize distribution ceremony was graced by Dr. Arunoday Saha, Former Vice Chancellor, Tripura University & present Vice Chairman, State Council of Higher Education, Govt of Tripura as the Chief Guest.



### ANNUAL SPORTS MEET 2019 OF NIELIT IMPHAL

NIELIT Centre Imphal organized the Annual Sports Meet 2019 for two days from March 18-19, 2019. Shri Armstrong Pame, IAS, Director Youth Affairs & Sports, Govt. of Manipur inaugurated the function as the Chief Guest. Various events such as 100 mt. race, Table Tennis, Chess, Badminton and Carrom etc. were organized for students as a part of the sports meet.



Shri Armstrong Pame, IAS, Director Youth Affairs & Sports, Govt. of Manipur delivering speech and Torch Relay for opening ceremony of Annual Sports Meet 2019.

### NATIONAL PRODUCTIVITY WEEK



Special Talks arranged at NIELIT HQ to observe the National Productivity Week

National Productivity Week was observed by NIELIT HQ and all its Centres during February 12-18, 2019 on the theme 'Circular Economy for Productivity and Sustainability'. Various activities such as Special Talks, Discussions, Poster Making, Essay Writing etc. were organized through the Centres.



## TECH वार्ता

### Artificial Intelligence, Machine Learning and Deep Learning

The Artificial Intelligence boom is happening all over the world and it is growing at a fast pace. Rapid and recent advances in the field of Artificial Intelligence have become the backbone of the digital world today, Google's search engines being the best example. These engines process structured as well as unstructured data, in petabytes, and bring forth the results in seconds. Applications of AI are all around us, whether they are advertisements on social media of products one is planning to buy or recommendation of other equivalent products or Amazon's Alexa or Apple's Siri.

The confusion of the terms Artificial Intelligence, Machine Learning and Deep Learning exists and these terms are used most often interchangeably but the thin boundary still exists.

**Artificial Intelligence** means incorporating human intelligence to machines. Artificial intelligence is the broader concept that consists of the old AI since 1950-60's to futuristic technologies such as deep learning. So the intelligent behavior depicted by a machine for doing a task based on some set of rules and computations in an automated manner is called Artificial Intelligence. Many applications of AI for image detection, facial recognition and personal assistants like Siri and Alexa are being used extensively.

**Machine learning** is a subset of AI which is based on models and algorithms which learn from the data. ML is one of the major approach to AI, but chatbots which are rule based, are programmed and come under the category of AI for showing human-like behavior but not ML as they are programmed and do not learn anything new from those questions.

ML helps to create intelligent and data driven applications for good decisions. The algorithms used in Machine Learning learn from the data and therefore improve with time. It also discovers new ways to solve challenges based on experience gained by the machine with time. Example a computer playing a game of chess learns from experience and subsequently makes better moves to win the game.

ML has involved the interest of scientists to such a level that it is growing rapidly and evolved as the main area of research in domains where automation is required. ML is being used in various areas like pattern recognition, digit scanning, search engines, social media sites.

#### Deep Learning

Deep learning is a subset of ML or in other words, it is a technique for realizing machine learning. Deep Learning can automatically discover the features to be used for classification whereas ML requires these features to be provided manually.

Artificial neural networks (ANNs) are a type of algorithms that aim to imitate the way the neurons work in our brains and make decisions.

The network works in layers and every layer produces the output leading to more learning and giving accurate results. The practical applications of ML have been improved and enhanced by use of DL. These models give a lot of accuracy as it has almost totally removed the false positives.

Have you ever thought how Facebook detects your face amongst so many faces? It uses image detection through deep learning techniques which use huge trained datasets. In contrast to ML algorithms, DL requires huge amounts of training data to deliver accurate results and also needs high-end machines.

Many computer vision, automatic speech recognition, recommendation system and natural language processing systems are the popular applications of Deep Learning. AI examples like chess-playing computers to self-driving cars – rely heavily on machine learning and deep learning.

#### Types of Machine Learning Algorithms:

##### 1. Supervised learning

The Machine learning algorithm is presented with example inputs and their desired outputs and the goal is to learn a general rule that maps inputs to outputs.

The training process continues until the model achieves a desired level of accuracy on the training data. After the model is determined, it is used to apply labels to new and unknown data.

Example: Predicting the price of a house based on dataset which consists information about the location of the house, price and other aspects such as square feet etc. The Linear Regression model may be used on this dataset.

##### 2. Unsupervised learning

The Machine Learning algorithm is presented only with example inputs but no expected outputs. So the algorithm is left on its own to find structure in its input and therefore it is a goal in itself (discovering hidden patterns in data) or a means towards an end (feature learning).

It is used for clustering population in different groups, which is widely used for segmenting customers in different groups for specific intervention.

**Example:** A shirt manufacturing company based on huge dataset of shirt specifications like chest size, shoulder size and waist size, wants to group all shirts into three sizes of small, medium and large. The model would then predict an appropriate shirt size for every customer.

##### 3. Reinforcement learning

A Machine learns and trains itself in a particular environment through a process of trial and error where by performing actions and seeing the results. It allows the machine or software agent to learn its behavior based on feedback from the environment and finally this behavior is learnt and keeps on changing with time.

**Example:** A Chess game where one wrong move will penalize the agent and it may lose a game, while a combination of one or more right moves will earn it a reward by asking it to win.

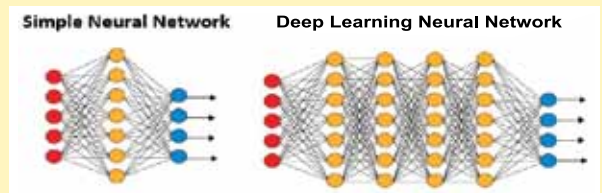
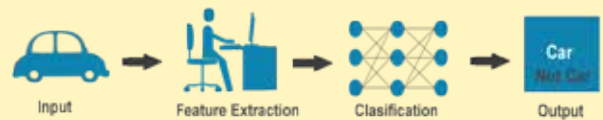
#### Open Source AI Technologies

**Python** : is in the first place in the list of all AI development languages due to its simplicity and existence of plenty of libraries. Scikit-learn for Machine Learning and Tensor flow, Theano library, Keras API, Caffe frameworks for Deep Learning in Python are the most popular ones.

**Tensor Flow** is arguably one of the best deep learning frameworks and has been adopted by several giants such as Airbus, Twitter, IBM, and others mainly due to its highly flexible system architecture.

**Apache Spark MLlib** in Java, Python, Scala and R are also very popular.

**DeepLearning4j** is a deep learning toolset for the JVM and the only semi-popular framework not available in Python.



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# SWACHHTA PAKHWADA



In line with the initiative of Government of India, NIELIT HQ and its centres across the country observed "Swachhta Pakhwada" from 1st February to 15th February 2019. During the fortnight, certain days were earmarked for specially focussed activities to raise awareness about swachhta such as Cleaning of litter outside the campus, Pledge Ceremony, Cyclothon, Poster Competition, Tree plantation etc.



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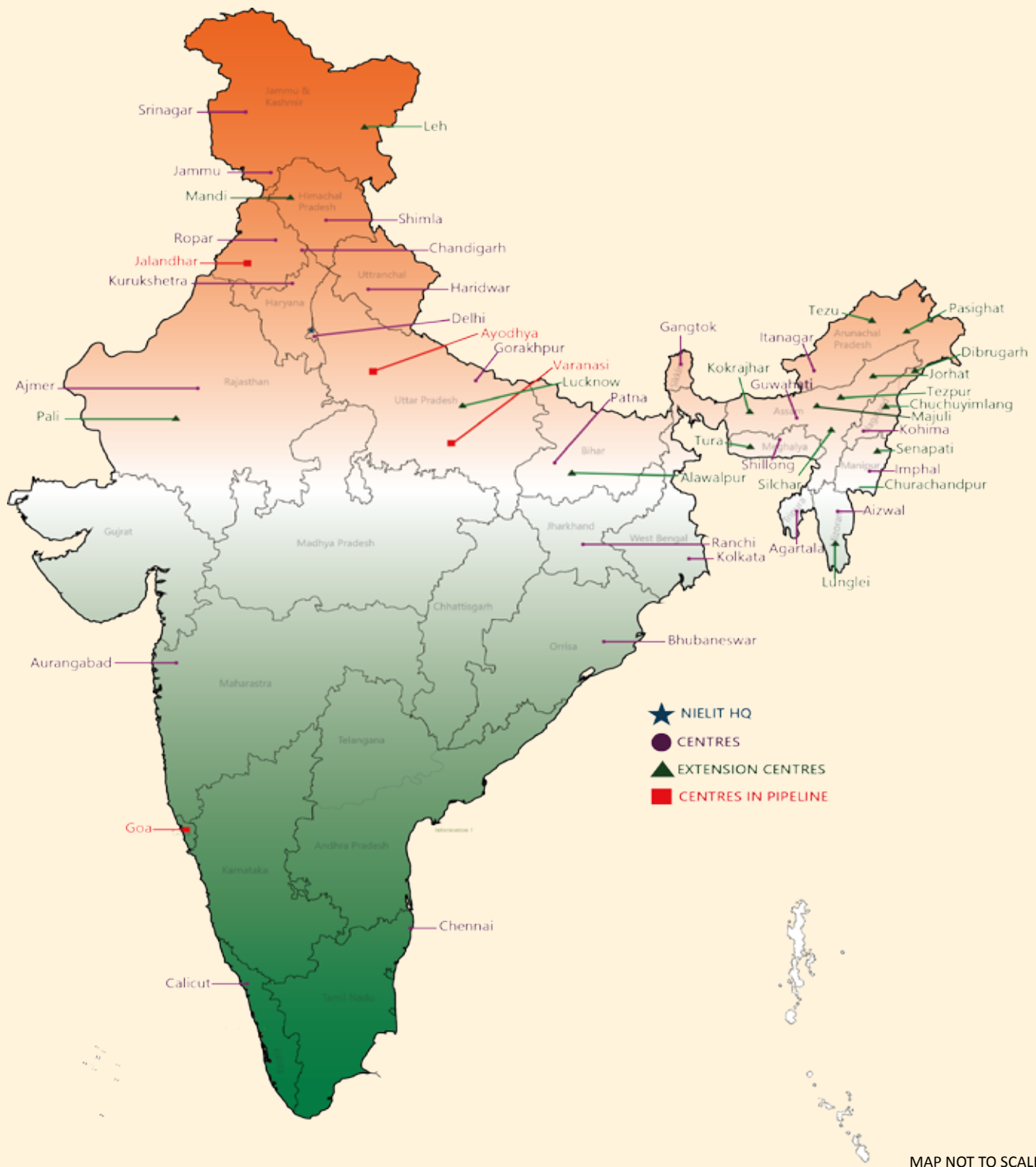


NIELIT HQ



NIELIT AURANGABAD

# PAN INDIA PRESENCE OF NIELIT



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