



NATIONAL INSTITUTE OF TECHNOLOGY

WARANGAL – 506 004 (Telangana State)

**Interdisciplinary Cyber Physical System Division (ICPS
Division), DST, Govt. of India
Short Term Training Programme**
on



विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY

Machine learning and Deep learning for Real time Applications

Organized by

Department of Electronics and Communication Engineering, NITW

(29th Nov -8th Dec, 2019)

Preamble:

DST has recently launched a new programme “Interdisciplinary Cyber Physical Systems (ICPS)” to foster and promote R&D in this emerging field of research. A Cyber Physical System (CPS) is a mechanism controlled or monitored by computer-based algorithms, tightly integrated with internet and its users. It is an engineered system that are built from and depend upon, the seamless integration of computational algorithms and physical components. In general Cyber means computation, communication and control that are discrete and logical. Physical means natural and human-made systems governed by the laws of physics and operating in continuous time. Computing and communication systems bridges with the physical world are referred to as Cyber Physical Systems. CPS are physical and engineered systems whose operations are monitored, coordinated, controlled and integrated by a computing and communication core.

About the training program

Machine learning is a method of data analysis that automates analytical model building. It is a branch of artificial intelligence based on the idea that systems can learn from data, identify patterns and make decisions with minimal human intervention. Machine learning does quick and automatic models that can analyze bigger, more complex data and deliver faster, more accurate results – even on a very large scale by building precise models, an organization has a better chance of identifying profitable opportunities or avoiding unknown risks. According to Gartner report, out of 10 lakh registered companies in India, 75 percent have invested or are going to invest in machine learning and data science, which provides huge opportunity for students to get placed in a good reputed organization.

Major Course Contents:

- Fundamentals of Artificial Intelligence
- Python Programming and OOPs
- Introduction to linear algebra using numpy and pandas library
- Introduction to Regression Analysis
- Introduction to different Regression and Optimization Algorithms , L1 and L2 Regularization
- Error function, Activation functions and Maximizing the Likelihood
- Logistic Regression and Classification Problem
- Support Vector Machine
- K-means Algorithm and implementation
- Introduction to Artificial Neural Network, Back Propagation and Hyper-parameter tuning
- Convolutional Neural Network
- Implementation of LeNet,Vgg and ResNet Architectures
- Implementation of Machine Learning algorithms on Raspberry pi/ Jetson nano module
- Implementing Face recognition, Object detection, facial Emotion recognition and Jetbot on Jetson nano/R-Pi boards.

Faculty conducting this programme:

The programme will be conducted by the faculty members from **NIT Warangal**. Academicians in the concerned field from **IITs/NITs/IIITs** are invited to deliver lectures in the programme. Speakers from **industries** are also expected to deliver as part of the course.

Eligibility: All the faculty members of AICTE Approved Engineering, Polytechnics, MCA Colleges, Research Scholars, B.Tech Students.

Registration Fee Particulars: No Fee

Travel Allowance: To -and fro fare of maximum INR 2000 will be paid to the eligible participants.

Accommodation:

All the selected participants will be provided FREE boarding & lodging in the institute guest house.

How to apply:

A filled in form of application in the prescribed format duly signed and sponsored by appropriate authorities should be submitted on the day of registration.

It is also mandatory to fill the following google form and selection will be intimated only through mail.

<http://tiny.cc/6mvcez>

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of 30 (thirty). The list of selected participants will be intimated through e-mail. Candidates will be issued satisfactory certificates on successful completion of the course. Reservations are followed for selecting candidates as per GOInorms.

Important dates:

Last date for submission of application: 20-11-2019

Selection-list intimation/display before: 22-11-2019

Duration of Program 29th Nov-8th Dec, 2019

About the Institute, Department and Warangal:

National Institute of Technology (formerly Regional Engineering College), Warangal is the first among 17 RECs setup as joint venture of the Government of India and the state government. Over the years the college has established itself as a premier Institution imparting technical education of a very high standard leading to the B.Tech degrees in various branches of engineering and M.Tech. and Ph.D programs in various specializations.

The Department of Electronics and Communication Engineering offers an Undergraduate program in Electronics and communication Engineering and three Postgraduate programs in EI, VLSI, and ACS Specializations. The Department has experienced faculty and well-established laboratories. The Department has liaison with reputed industries and R&D organizations like DRDO, ISRO ECIL, Analog Devices Bangalore and C-DAC. Department conducts various sponsored programmes throughout the year.

Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140Km. from Hyderabad. Warangal is well connected by rail and road. National Institute of Technology campus is 2 Km. away from Kazipet junction and 12Km. away from Warangal station.



Application Form

NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL



Department of Electronics and Communication Engineering

Interdisciplinary Cyber Physical System Division (ICPS Division), DST, Govt. of India
Short Term Training Programme on
Machine learning and Deep learning for Real Time Applications
(29th Nov-8th Dec ,2019)

1. Name :

2. Designation :

3. Institution :

4. email:

5. Address for Correspondence

6. Educational Qualifications with specialization:

7. Subjects taught so far(if faculty):

8. No. of refresher courses/workshops attended:

9. Experience (in Years) Teaching:
Research:
Industry:

10. Accommodation required: YES / NO

11. Are you belong to SC/ST:
YES/NO (If yes, please specify and attach
a copy of caste certificate)

Declaration

The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the training program and shall attend the course for the entire duration. I also undertake the responsibility to inform the Coordinator in case, I am unable to attend the course.

Place:

Date:

Signature of the applicant

SPONSORSHIP CERTIFICATE

Dr/Mr/Ms. is

..... is Faculty/ResearchScholar/Student/Employee of our Institute/ Organization and is hereby sponsored to participate in the training programme on “Machine learning and Deep learning for Real Time Applications” sponsored by ICPS ,DST during 29th Nov-8th Dec ,2019 at Department of ECE, National Institute of Technology, Warangal.

Place:

Date:

Signature of Head of Institution /
Organization (with seal)

Address for correspondence

Dr. J.Ravi Kumar
Department of Electronics and
Communication Engg, National Institute of
Technology Warangal, WARANGAL - 506
004, Telangana State, India.

For more information visit:

<http://nitw.ac.in>

For any enquiry contact:

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Coordinator

Dr. J. Ravi Kumar,
Associate Professor
Department of ECE, NIT Warangal

Coordinator

Dr. Maheshwaram Satish,
Assistant Professor
Department of ECE, NIT Warangal

ICPS – DST and
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