Electronics & ICT Academy
NIT Warangal

G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE (For Women)
AUTONOMOUS

G. Pulla Reddy Engineering College (Autonomous)
Kurnool - 518 007, Andhra Pradesh, India

ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP)

ON

Deep Learning and Machine Learning in Biomedical SignalProcessing

(23rd August 2021 – 3rd September 2021)

Organized by

E & ICT Academy, National Institute of Technology, Warangal.

in association with

Department of Electronics and Communication Engineering

G. Narayanamma Institute of Technology and Science (for Women) (AUTONOMOUS)
Shaikpet, Hyderabad

and

G. Pulla Reddy Engineering College (AUTONOMOUS), Kurnool

(Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI)

Preamble:

"Electronics & ICT Academy" was set up at NIT Warangal with financial assistance from MeitY, GoI. The jurisdiction of thisacademy is Telangana, Andhra Pradesh, Karnataka, Goa, Puducherry and Andaman & Nicobar Islands. This academy roleis to offer faculty development programmes in standardized courses and emerging areas of Electronics, Information Communication Technologies, training & consultancy services for Industry, Curriculum development for Industry, CEP for working professionals, Advice and support for technical incubation and entrepreneurial activities.

About the Workshop:

Healthcare occupies an indispensable part in human lives. The healthcare industry contains large amount of psychiatric data hence machine learning models were used to provide conclusion effectively in the disease prediction. Clinical data from electronic medical records, registries or trials provide a large source of information to apply machine learning methods in order to foster precision medicine. Even though there is a growing interest in the application of machine learning (ML) techniques to address clinical problems, the use of deep-learning in healthcare have just gained attention recently.

Major Course Contents:

- **The prediction of spread of COVID-19 using Regression Models**
- **Breast cancer analysis using logic regression**
- **Data Clustering Algorithms: k-means and K nearest Neighbor Algorithms**
- **SVM Algorithm in predicting the outbreak of cardiovascular diseases in patients on dialysis**
- **Blood Diseases Detection using Classical Machine Learning Algorithms**
- **Introduction to Deep Learning, Deep Neural Networks**
- **Foundations of Convolutional Neural Networks Object Detection**
- **Recurrent Neural Networks**
- **Deep neural network medical image segmentation**
- **Linear Algorithms and Optimizations**
- **Deep Convolutional Models**

Faculty conducting this programme:

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

Eligibility:

The programme is open to faculty of Engineering Colleges, MCA Colleges and other allied disciplines in India. Industry personnel working in the concerned /allied discipline can also attend.

Registration Fee Particulars:

- **Faculty & Research scholars: Rs. 750/-**
- **Industry Participants: Rs. 2250/-**

The fee shall be paid by online transfer using the following details: Please write "DLMLBM" in remarks or purpose while doing online payment transaction

Bank details for Online Transfer:

- Account Name: Electronics & ICTAcademy, NITW
- **Account No: 62423775910**
- **IFSC: SBIN0020149**
- Bank and Branch: State Bank ofIndia, NIT(REC) Warangal

PRINCIPAL
G. Narayanamma Institute of
Technology & Science (for Women)
(AUTONOMOUS)
Shaikpet, Hyderabad - 500 008

How to apply:

A filled in form of application in the prescribed format (*refer to page 2 of this brochure for format and the printout of the same can be used to fill), duly signed and sponsored by appropriate authorities should reach the coordinator by email since the confirmation of selection will be intimated only through mail.

Coordinator Mail ID: DLBM.GNITS2021@GMAIL.COM

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of 100. Additionally 10 participants from industry are allowed to participate. The list of selected participants will be intimated through e-mail. In case a candidate is not selected, the registration fee amount will be refunded. Short listed Candidates will be issued certificates on successful completion of the course. Reservations are followed for selecting candidates as per GOI norms.

Important dates:

Last date (Registration and fee payment)	20th August, 2021
Selection List by E- mail	21st August, 2021
Duration	23rd August –3rd September, 2021

About NIT Warangal:

National Institute of Technology, Warangal is the first among 17RECs setup as joint venture of the Government of India and the state government. Over the years the college has established itself as a premier Institute imparting technical education of a very high standard leading to the B.Tech degrees in various branches of engineering, M.Tech. and Ph.D programs in various specializations. All B. Tech and M. Tech programmes of NITWarangal are NBA accredited.

About GNITS:

G. Narayanamma Institute of Technology & Science, a leading Engineering college in Hyderabad for Women, was founded by late Sri. G. Pulla Reddy garu in 1997, with an objective of providing excellent learning facilities for Women to pursue education in Engineering since two decades. The aim is to promote Technical Education among Women to enhance and build up a new generation of thinkers, innovators and planners in the realms of Science and Technology. GNITS received UGC autonomous status for 10 years from 2018 and is affiliated to JNTUH .It is approved by AICTE, accredited by NAAC & NBA (AICTE) and ISO 9001:2015 certified institution.

About ECE department of GNITS:

The department of ECE was started in the year 1997 with an intake of 60 students. The intake was increased to 180 students. The department also offers PG course in DECE with an intake of 18. The department has applied for 5 patents, published 4 books, R&D equipment costing 3.57 crores and received 43 lakhs funding from ACITE for carrying out the projects to its credit. It has 8 doctorates in diversified fields of electronics &17 faculty Pursuing Ph.D from IITs/IIITs/NITs with alumnae in IITs/Top class MNCs/Public sectors/Abroad universities.

About GPREC:

G. Pulla Reddy Engineering College is the brainchild of Late Sri G. Pulla Reddy garu, the renowned philanthropist, and a great humanist, established in 1984-85. It is one of the earliest private engineering colleges in Andhra Pradesh. The trust was instituted by late Sri G.Pulla Reddy Garu in the year 1977 with the motto of rendering service to the society. The College has been approved by AICTE and affiliated to JNTUA, Ananathapuramu and accredited with Autonomous Status by the UGC, New Delhi. Accredited by NAAC Grade(A+)) of UGC & NBA of AICTE and Ranked 190 by NIRF- 2020 , Recognized as Mentor Institution by AICTE under Margdarshan Scheme.

About the ECE Department of GPREC:

The ECE dept. was established in the academic year 1984-85 with an intake of 40 and currently with 198 regular and 18 lateral entry students. The department also offers PG Programme in VLSI and Embedded Systems with an intake of 18. The department is recognized as a research centre by JNTUA,Ananthapuramu and offers full-time Ph.D programme. It has a strong pool of faculty with 14 Ph.D's , 17 faculty Pursuing Ph.D.

Electronics & ICT Academy NIT Warangal

GNITS G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE (For Women) AUTONOMOUS

gprec G. PULLA REDDY ENGINEERING COLLEGE
G. Pulla Reddy Engineering College (Autonomous)
Kurnool - 518 007, Andhra Pradesh, India

ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP)

ON

Deep Learning and Machine Learning in Biomedical SignalProcessing

(23rd August 2021 – 3rd September 2021)

Organized by

E & ICT Academy, National Institute of Technology, Warangal.

in association with

Department of Electronics and Communication Engineering
G. Narayanamma Institute of Technology and Science (for Women) (AUTONOMOUS)
Shaikpet, Hyderabad

and

G. Pulla Reddy Engineering College (AUTONOMOUS), Kurnool
(Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI)

1. Name of the Applicant:
2. Designation :
3. Institution Name:
4. Email id:
5. Mobile No:
6.

Details of payment using Online Transfer
Reference No:
Amount:
Bank :
Date of transfer:

7. Address for Correspondence:
8. Educational Qualification:
9. Subjects taught so far (*Applicable for Faculty):
10. No. of refresher courses/workshops attended related to this FDP area:
11. Experience (in years): Teaching: Research: Industry:
12. If belongs to SC ☐ ST ☐
13. **Declaration by the Applicant:**

The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the FDP 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.

Signature of the Applicant

14. **SPONSORSHIP CERTIFICATE**

Dr. /Mr. /Ms. ..... is an employee of our Institute/Organization and is hereby sponsored to participate in the FDP on **"Deep Learning and Machine Learning in Bio- medical Signal Processing"**, sponsored by Electronics & ICTAcademy during 23rd August to 3rd September , 2021.

Signature of Head ofInstitution (with seal)

Registration Process:

It is requested to all the delegates, after completion of application form, all the payment details, upload the screenshot of the payment and scanned copy of duly filled and signed application form in the following online registration link

Registration Link:

https://forms.gle/2G8ubrB8SXVJHHj96

- ✓ *Email the screenshot of the payment and scanned copy of duly filled and signed application form to the following mail id*

DLBM.GNITS2021@GMAIL.COM

- ❖ *For more details about Electronics & ICT Academy, NIT, Warangal, please visit: https://nitw.ac.in/eict*
- ❖ *Please Post your queries if any by joining the whatsapp group with the below link*
  - ➢ *https://chat.whatsapp.com/Cd0tKjsMEs65q8XlxsZZoz*

  Or Contact
  - ➢ ***(1) Mrs. Sarada.A ,Asst.Prof, ECE,GNITS Contact number: 8374683421***
  - ➢ ***(2) Mrs.P.Sri Padma,Asst.Prof,ECE,GNITS Contact number:9849161246***
  - ➢ ***(3) Dr.G.Amjad Khan, Assoc.Prof,ECE,GPREC Contact number: 9912555105***

Chief Patron:

Sri. P. Subba Reddy, Chairman,
GNITS, Hyderabad & GPREC, Kurnool

Patron:

Smt. G. Srividya Reddy, Secretary
GNITS, Hyderabad

Chairmans:

1. *Dr. K . Ramesh Reddy, Principal, GNITS, Hyderabad*
2. *Dr.B.Sreenivasa Reddy, Principal, GPREC, Kurnool*

Conveners:

1. *Dr. B.Venkateshulu, Professor of ECE & Head, GNITS, Hyderabad*
2. *Dr. S.Nagaraja Rao, Professor of ECE & Head, GPREC, Kurnool*

Coordinators:

Dr. J. Ravi Kumar
Associate Professor,
Dept. of ECE
National Institute of Technology Warangal 506 004
Telangana State, India

Mrs.Sarada. A
Assistant Professor,
Dept. of ECE
G. Narayanamma Institute of Technology and Science (for Women) (Autonomous),
Shaikpet, Hyderabad 500 104
Telangana State, India

Dr.G.Amjad Khan
Associate Professor
Dept.of ECE
G.Pulla Reddy Engineering College(Autonomous),Kurnool
Kurnool-518007
Andhra Pradesh, India

PRINCIPAL
G.Narayanamma Institute of Technology & Science (for women)
(AUTONOMOUS)
Shaikpet, Hyderabad - 500 104

Electronics & ICT Academy
NIT Warangal

GNITS
G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE (For Women)
AUTONOMOUS

gprec
G. PULLA REDDY ENGINEERING COLLEGE
G. Pulla Reddy Engineering College (Autonomous)
Kurnool - 518 007, Andhra Pradesh, India

ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP)
ON
Deep Learning and Machine Learning in Biomedical Signal Processing
(23rd August 2021 – 3rd September 2021)
Organized by
E & ICT Academy, National Institute of Technology, Warangal.
in association with
Department of Electronics and Communication Engineering
G. Narayanamma Institute of Technology and Science (for Women) (AUTONOMOUS)
Shaikpet, Hyderabad
and
G. Pulla Reddy Engineering College (AUTONOMOUS), Kurnool
(Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI)

Tentative Schedule

Day	10.–10.30 AM	Session 1 10.30-12 PM	Lunch Break	Session 2 2.- 4 PM
23-08-2021	Inauguration	Introduction to Machine Learning and Bio-Medical Signal Processing **Dr. J Ravi Kumar, NITW**		FECG Extraction using LMS and RLS **Dr. J Ravi Kumar, NITW**
24-08-2021	Introduction to Linear Regression using Least Square and Gradient Descent methods **Dr. J Ravi Kumar, NITW**			Introduction to Python Programming NIT Warangal **Dr. J Ravi Kumar &Mr.M Vijay Kumar** NIT Warangal
25-08-2021	Introduction to Python Programming **Dr. J Ravi Kumar & Mr.A.B.Ahadit** NIT Warangal			Predicting COVID-19 cases using Simple regression **Dr. J Ravi Kumar & Mr.A.B.Ahadit** NIT Warangal
26-08-2021	Multiple and Polynomial regression Analysis **Dr. J Ravi Kumar & Mr.A.B.Ahadit** NIT Warangal			Predicting COVID-19 cases using Multiple and Polynomial regression **Dr. J Ravi Kumar& Mr.A.B.Ahadit** NIT Warangal

PRINCIPAL
G. Narayanamma Institute of Technology & Science (for women) (AUTONOMOUS) Shaikpet, Hyderabad-500 104

27-08-2021	Logistic Regression and Breast cancer Detection **Dr. J Ravi Kumar &Mr.M Vijay Kumar** **NIT Warangal**		Support Vector Machine **Dr M. Srinivas , CSE, NITW**	
28-08-2021	Support Vector Machine **Dr M. Srinivas , CSE, NITW**		Support Vector Machine **Dr M. Srinivas , CSE, NITW**	
31-08-2021	Basic Neural Network and Back Propagation **Dr. J Ravi Kumar & Mr.M Vijay Kumar** NIT Warangal		Application of Artificial Neural Networks in Cardiovascular disease Prediction **Dr. J Ravi Kumar & Mr.A.B.Ahadit** NIT Warangal	
01-09-2021	Introduction to Convolutional Neural Networks **Dr. J Ravi Kumar, NITW**		Implementation of CNN using Keras and Tensorflow **Dr. J Ravi Kumar & Mr.A.B.Ahadit** **NIT Warangal**	
02-09-2021	Recurrent Neural Networks and applications **Dr. Kadambari, CSE, NITW**		Implementation and Demonstration of Project Using Deep neural network **Prof. Bhurchandi** NIT Nagpur	
03-09-2021	Generative Adversarial Networks and applications **Dr. Swagatam Das, ISI Kolkata**		Tests conduction, Feedback from Participants	Valedictory 3.30-4PM

PRINCIPAL
G. Narayanamma Institute of Technology & Science (for women)
(AUTONOMOUS)
Shaikpet, Hyderabad - 500 104

ELECTRONICS & ICT ACADEMY

NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL, (T.S.), INDIA

and

G.Narayanamma Institute of Technology and Science (for Women)(Autonomous),Hyderabad,T.S.,
G. Pulla Reddy Engineering College(Autonomous), Kurnool,A.P.

JNTUH FDP ID
FDP2021260715420B

Participation Certificate

This is to certify that DEEPTHI AMURU, Assistant Professor

from G NARAYANAMMA INSTITUTE OF TECHNOLOGY &SCIENCE(for Women)(AUTONOMOUS), Shaikpet,Hyderabad has participated in a 40-hour Online Faculty Development Programme on "Deep Learning and Machine Learning in Biomedical Signal Processing" Sponsored by Ministry of Electronics and Information Technology (MeitY) GoI, organised by E&ICT Academy, NIT Warangal and Department of Electronics and Communication Engineering, G.Narayanamma Institute of Technology and Science (for Women)(Autonomous), Hyderabad, T.S., G. Pulla Reddy Engineering College (Autonomous)Kurnool, A.P. during 23rd August - 3rd September, 2021.

She / He has successfully completed all the requirements for the completion of the programme.

Mrs. Sarada Aavula	Dr.G.Amjad Khan	Dr. Ravi Kumar Jatoth	Dr.K.Ramesh Reddy	Dr.B.Sreenivasa Reddy	Prof. R.B.V. Subramaanyam	Prof. N.V. Ramana Rao
Coordinator GNITS, Hyderabad	Coordinator GPREC, Kurnool	Coordinator NIT, Warangal	Principal GNITS, Hyderabad	Principal GPREC, Kurnool	Chief Investigator E&ICT Academy, NIT Warangal	Director NIT, Warangal

PRINCIPAL
G. Narayanamma Institute of Technology & Science (for women)
(AUTONOMOUS)
Shaikpet, Hyderabad - 500 104

Scanned with CamScanner

G.NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE (For Women)
(AUTONOMOUS)
Shaikpet, Hyderabad – 500104

Department: Electronics and Communication Engineering
2021-22
REPORT
FDP on "**Deep learning and Machine learning in Biomedical signal processing**"
Date of program: 23-08-2021-3-9-2021

Resource person: Dr.Ravi Kumar, Santosh Kumar
About the Program:

The FDP was inaugurated on 23rd Aug 2021 followed by first session by Dr.Ravi Kumar, Assoc.Prof, ECE Dept, NITW.
On the second day of the FDP, FN session was by Dr.Ravi Kumar, Assoc.Prof, ECE Dept, NITW on Introduction to linear regression followed by a hands on session in the afternoon.
Third day was a complete hands on session on regression models.
Fourth day of the FDP FN session was Preprocessing of EEG data by Santosh Kumar,Assoc.Prof, BVRIT.
Fifth was a session by Dr.RaviKumar on logistic regression followed by hands on session.
6th day was a session on Introdcution to neural networks by Dr.Ravi Kumar followed by application of neural network in cardiac disease detection by B.Ahadit
7th and 8th days had sessions on recurrent neural netowrks followed by valedictory.

The overall experience of attending the workshop is quite helpful in a better understanding on Neural network, concept on machine learning and how to can be applied to Biomedical signal Processing.

Signature of the Faculty member

PRINCIPAL
G. Narayanamma Institute of
Technology & Science (for women)
(AUTONOMOUS)
Shaikpet, Hyderabad - 500 104