



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### Report on One Week Online FDP on "DEEP LEARNING & IT'S APPLICATIONS " using Microsoft Teams

Event Type : FACULTY DEVELOPMENT PROGRAM (FDP)

Date / Duration : 15<sup>th</sup> – 20<sup>th</sup> June, 2020 (ONE WEEK)

Resource Person : **Dr. P.Venkatappa Reddy, Associate Professor,**

Convener : Dr. Y. Amar Babu, professor & HoD

Coordinators : Dr. G L N Murthy, Professor  
Mr. K. Ravi Kumar, Assistant Professor

Target Audience : 250

Total no of Participants: 99 (Internal Count=49 & External Count=50)

**Objective of the event:** The objective of this FDP is to lay an insight into various aspects of Deep Learning. It is aimed at assisting the research community to avail the programming aspects of python for solving real time problems.

#### **Outcome of event :**

- 1) The faculty can be able to get an exposure to the most trending technology vide Deep Learning and it's applications.
- 2) The faculty can be able to get a bird eye view of numpy, tensor flow and keras , that are the major libraries of python that are prominently needed for Deep Learning programming. .

#### **Description / Report on Event:**

The one week online FDP program began with Inaugural function that was addressed by Principal Dr.K.Appa Rao , Head of the Department Dr.Y.Amar Babu. In his inaugural speech , Dr.Y.Amar Babu highlighted the significance of Deep learning in strengthening the research. Deep Learning , being a multi disciplinary area should be learnt by all those involved in research irrespective of specialization, as mentioned by Dr.K.Appa Rao. All the participants are advised to utilize all the sessions and gain practical knowledge.

On day 1, Dr.P.Venkatappa Reddy, has narrated the evolution of Deep Learning an elaborative comparison of Artificial Intelligence, Machine Learning and Deep learning. The interlinking between Linear algebra, signal processing and deep learning was also mentioned. Various applications of Deep learning were also mentioned along with an overview of underlying concepts on Artificial Neural Networks.

During Second Day, NumPy, which stands for Numerical Python, is a library consisting of multidimensional array objects and a collection of routines for processing those arrays was explained along

with tensor flow and keras by using practical examples. This was followed discussion on numerous optimization algorithms.

Regularization and optimization strategies are presented on day 3. They are significant in the sense that the architecture of Convolutional Neural networks(CNN), demands the huge and rich amount of data and involves with a vast number of parameters that leads the learning takes to be computationally expensive, slow convergence towards the global minima, trap in local minima with poor predictions.

The architecture of CNN, that was particularly mentioned for structured data was elaborated on day 4. The relationship between CNN and signal processing was given.

On day 5, numerous CNN architectures like Googlenet, resnet, Alex net were elaborately discussed. Accessing the datasets and executing programs using python were practically demonstrated.

On the last day of FDP, recurrent neural network (RNN) is a class of artificial neural networks where connections between nodes form a directed graph along a temporal sequence was introduced. Further, the applications of Long short-term memory (LSTM) that is an artificial recurrent neural network (RNN) architecture also, explained in terms of application in the field of deep learning.

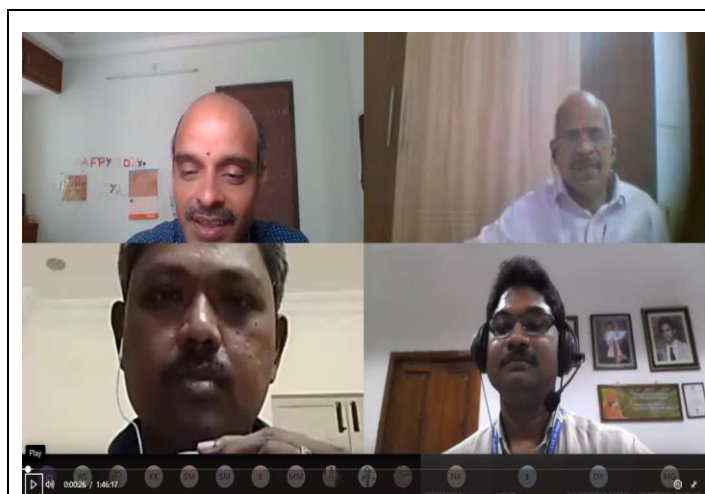
The FDP has provided an overview of Deep learning that helps the research community in implementing the algorithms for real time applications. Further, the program also explored various online data resources that are useful in the process of testing any algorithm or solving any problems.

The program ended by advising faculty members to continue the learning process as nit is much difficult to cover all concepts in a shorter time.

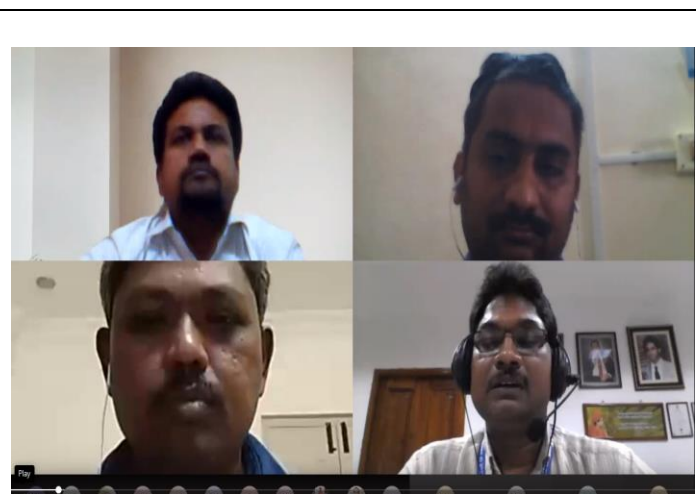
#### Feedback / Suggestions:

1. Organize with more practical exposure in future.
2. Conduct more FDPs on image processing in deep learning.
3. Conduct FDP on detection & estimation theory in signal processing area
4. Need more time and hands on.
5. Time provided is very less and examples are not sufficient for beginners
6. Provide pdf of some books related to deep learning
7. Conduct FDP on IoT and Embedded Systems

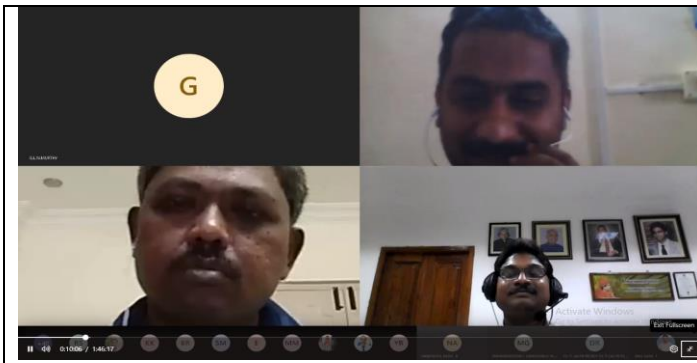
Photographs :



Addressing by HOD **Dr.Y.Amar Babu**



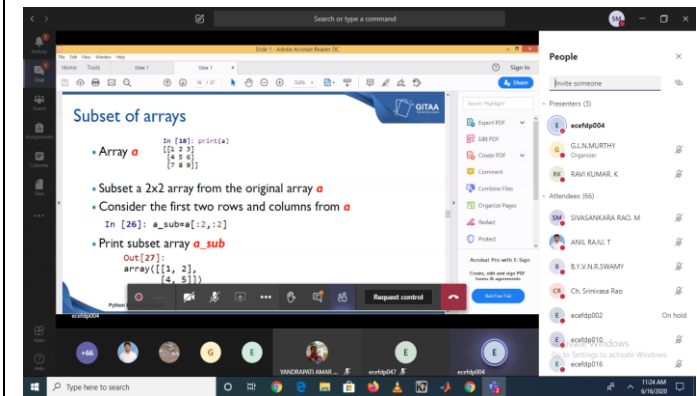
Addressing by Principal **Dr K.Appa Rao**



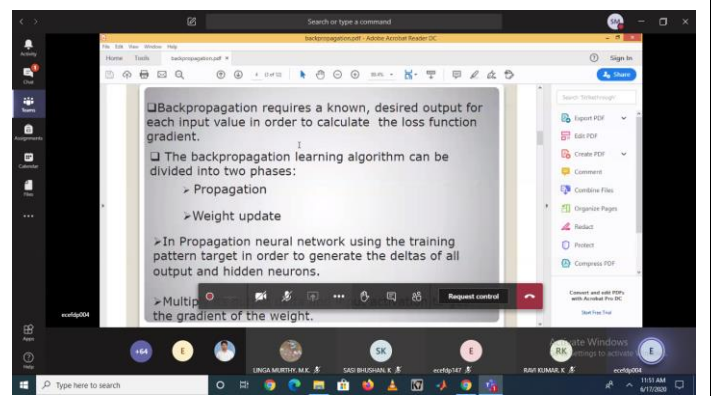
Addressing of Participants by Resource person  
**Dr.P.Venkatappa Reddy** , Associate Professor ,VFSTR,  
 Vadlamudi



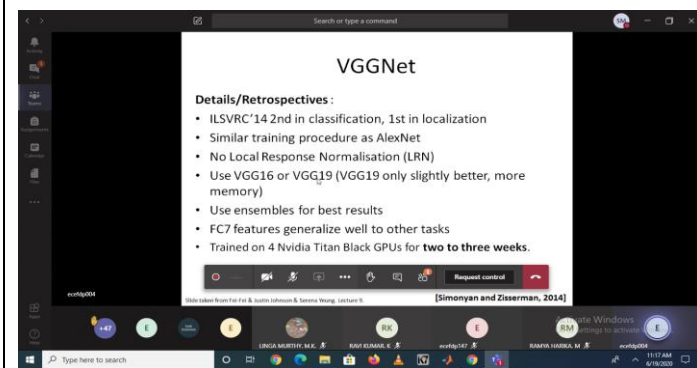
Presentation By Resource person



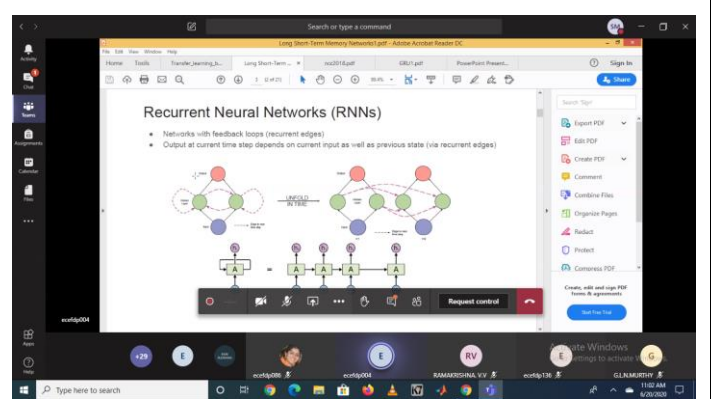
Deliberating the Programming aspects on Day2



Dropout mechanism discussed on Day 3



Convolutional Neural Networks (CNNs)discussed on  
 Day 4 & Day 5



Recurrent Neutral Networks (RNN) deliberated on  
 Day 6