



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(An Autonomous Institution since 2010)

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An ISO 21001:2018, 14001:2015, 50001:2018 Certified Institution  
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada  
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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

## *Report on Five Days Online Faculty Development Program on “Deep Learning and Its Applications” (10<sup>th</sup> June 2024 – 14<sup>th</sup> June 2024)*

Lakireddy Bali Reddy College of Engineering (A) has organized A Five-Days Online Faculty Development Program on “**Deep Learning and Its Applications**” from **10<sup>th</sup> June–14<sup>th</sup> June 2024**. This training program was organized by Department of CSE and has received an overwhelming response with more than 200 registrations. Out of them, we have shortlisted only 109 participants from various prestigious institutes like IITs, NITs and State Universities. Participants constitute a good mixture of Faculty, research scholars and PG students.

### **Day 1 -- Session1 (10/06/2024)**

The first session of the FDP is handled by **Dr. Somaraju Suvvari, Assistant Professor, NIT, Patna**. In this session the speaker has provided a brief introduction about Deep Learning, Deep learning Applications, Neural Network architecture. He had explained Introduction to Deep Learning and Deep Learning Applications, Neural Network Architecture.

#### **Topics Covered in the Session:**

- Deep learning.
- Deep Learning Applications.
- NNA.

The screenshot shows a Microsoft Teams meeting interface. The main content is a presentation slide titled "Types of Recommendation". The slide content is as follows:

**Types of Recommendation**

*Based on Approach [1, 2, 3, 4, 5]*

1. Content-Based Filtering - Recommend items to customer x similar to previous item rated highly by x (works based on the features of items).

**Examples:**

- *Movies* - Same actor, director, genre, ...
- *Websites, blogs, news* - Articles with "similar" content
- *People* - Recommend people with many common friends

2. Collaborative Filtering - Collaborative Filtering finds a subset of users who have similar tastes and preferences to the target user and use this subset for offering recommendation.

- i) User - based collaborative filtering
- ii) Item - based collaborative filtering

The slide also features a "Recording has started" notification box and a "Participants" list on the right side of the meeting window. The participants list includes Dr. Somaraju Suvvari (Unverified) and several other attendees.

*Day1 Session1 Presentation by speaker Dr. Somaraju Suvvari*

## **Day1-- Session2 (10/06/2024)**

This session is handled by **Dr. Somaraju Suvvari, Assistant Professor, NIT, Patna**. In this session the speaker demonstrated Hands-On Session on Deep Learning Applications and Neural Network Architecture. Pictorially he explained how NNA could be useful for classifying, how NNA's are represented, what are different layers in NNA how each layer is processed.

### **Topics Covered in the session:**

- Hand-On Session on Deep Learning Applications.
- Neural Network Architecture.

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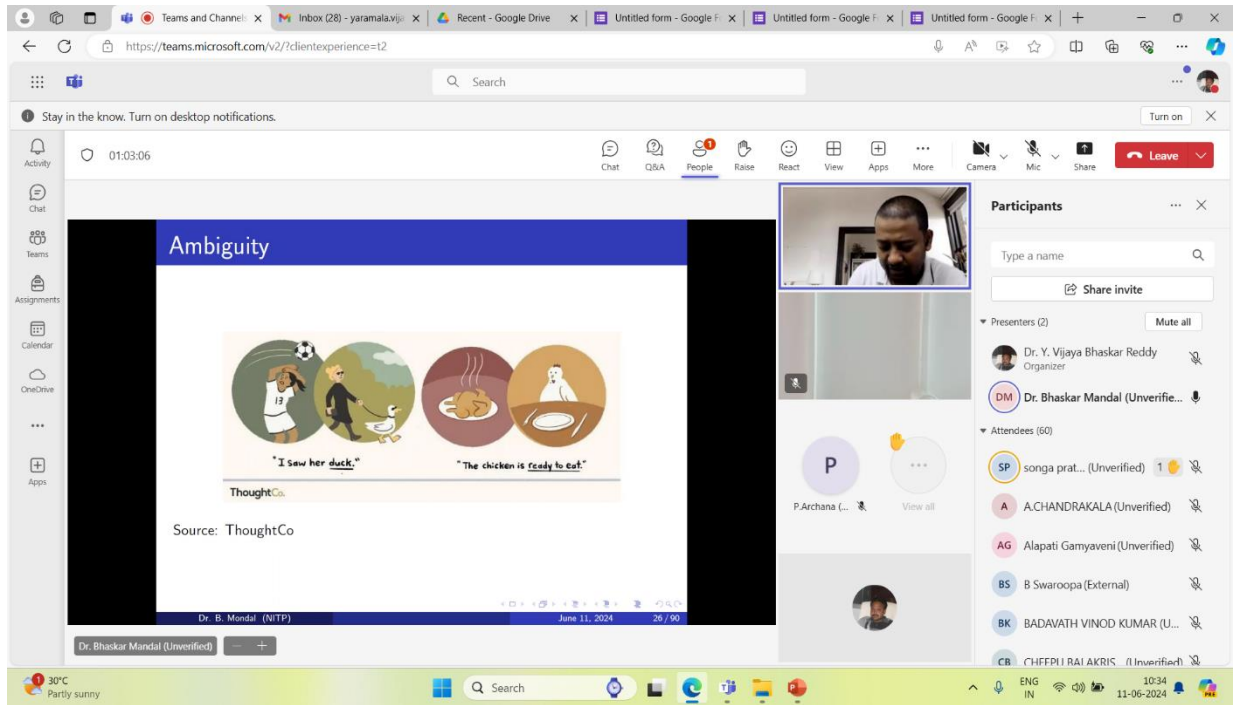
*Day1 Session2 Presentation by speaker Dr. Somaraju Suvvari*

## **Day 2 --Session1 (11/06/2024)**

This session is handled by **Dr. Bhaskar Mondal**, Assistant Professor, NIT, Patna. The speaker discussed session about CNN and CNN applications and Feature Extraction.

### **Topics Covered in the Session:**

- CNN
- CNN Applications



### *Day2 Session1 Presentation by speaker Dr. Bhaskar Mondal*

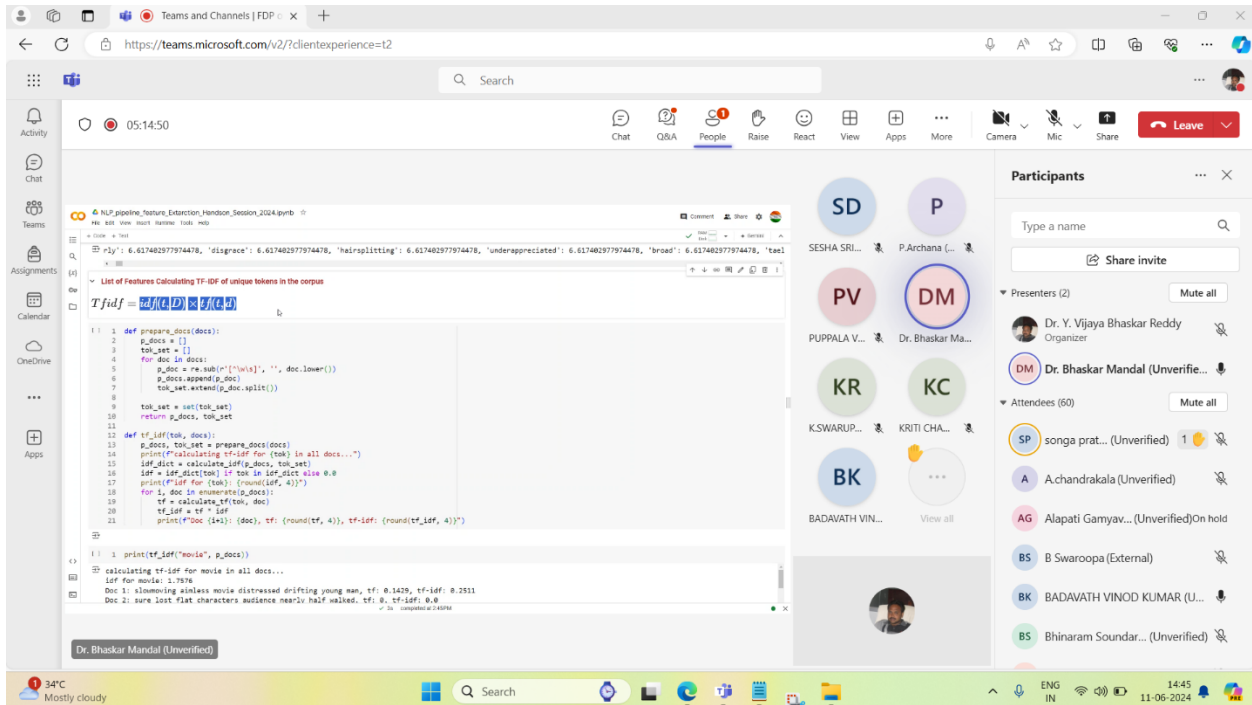
## **Day2 --Session2 (11/6/2024)**

This session is handled by **Dr. Bhaskar Mondal, Assistant Professor, NIT Patna.**

The speaker demonstrated Hands-on session on CNN and CNN Applications to handle feature extraction.

### **Topics covered in the session:**

- Hands-on Session on CNN and CNN Applications



*Day2 Session2 Presentation by speaker Dr. Bhaskar Mondal*

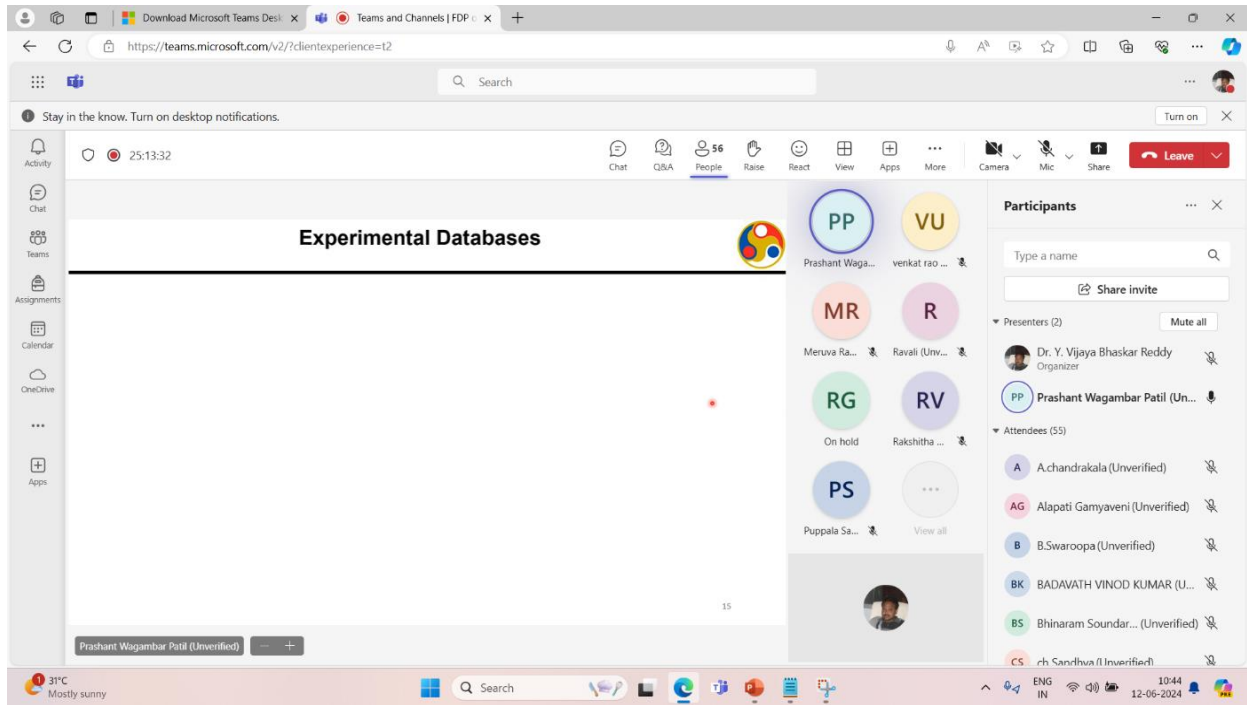
### Day3-- Session1 (12/6/2024)

This session is taken by **Dr. Prashant Wagambar Patil, Assistant Professor, IIT, Ropar.**

The speaker started the session with Computer Vision and Computer Vision Applications, Image Processing and Its Applications.

#### Topics covered in the session:

- Computer vision and computer vision applications.
- Image Processing and applications.



*Day3 Session1 Presentation by speaker Dr. Prashant Wagambar Patil*

## **Day3 --Session 2 (12/6/2024)**

This session is taken by **Dr. Santhosh Kumar Vipparthi, Assistant Professor, IIT, Ropar**. In The session speaker demonstrated Hands-on session on computer vision and computer vision applications.

### **Topics covered in the session:**

- Hands-on Session on computer vision and computer vision applications.

The screenshot shows a Microsoft Teams meeting interface. The main window displays a presentation slide titled "The training procedure for the generator is as follows:". The slide contains a flowchart with the following components and connections:

- Input Image** (red box) feeds into the **Generator** (blue box).
- The **Generator** outputs to the **Discriminator** (blue box).
- The **Discriminator** outputs to **All 1s** (red box).
- The **All 1s** feeds into **Sigmoid Cross Entropy** (blue box).
- The **Sigmoid Cross Entropy** feeds into **Lambda** (red box).
- The **Lambda** feeds into **Mean Absolute Error** (blue box).
- The **Mean Absolute Error** feeds back into the **Generator**.
- The **Target Image** (red box) also feeds into the **Mean Absolute Error**.

The Teams interface includes a top navigation bar with "Chat", "Q&A", "People", "Raise", "React", "View", "Apps", "More", "Camera", "Mic", and "Share". A "Leave" button is visible in the top right. The left sidebar shows "Activity", "Chat", "Teams", "Assignments", "Calendar", and "OneDrive". The right sidebar shows "Participants" with a search bar, "Share invite", and a list of presenters and attendees. The bottom status bar shows "Prashant Wagambar Patil (Unverified)", "BSE smicap", and "12-06-2024 14:30".

*Day3 Session 2 Presentation by speaker Dr. Santhosh Kumar Vipparti*

**Day4 --Session 1 (13/6/2024)**

This session is taken by **Dr. Bhaskar Mondal, Assistant Professor, NIT, Patna**. The session covered RNN and RNN Applications.

**Topics Covered in the session:**

- RNN.
- RNN Applications

**The Pooling layer**

8	7	5	3
12	9	5	7
13	2	10	3
9	4	5	14

2x2 pooling, stride 2

12	7
13	14

Max pooling

9	5
7	8

Average pooling

Two common functions used in the pooling operation are:

- Average Pooling: Calculate the average value for each patch on the feature map.
- Maximum Pooling (or Max Pooling): Calculate the maximum value for each patch of the feature map.

*Day4 Session 1 Presentation by speaker Dr. Bhaskar Mondal*

**Day4 --Session 2 (13/6/2024)**

This session is taken by **Dr. Bhaskar Mondal, Assistant Professor, NIT, Patna**. In The session speaker demonstrated Hands-on Session on RNN and RNN Applications.

**Topics Covered in the session:**

- Hands on Session on RNN and RNN Applications.



```
def mynet_CNN_model():
    model = tf.keras.models.Sequential()
    model.add(layers.Conv2D(8, (3, 3), padding='same', activation='relu', input_shape=(IMAGE_HEIGHT, IMAGE_HEIGHT, 3)))
    model.add(layers.MaxPooling2D(pool_size=(2,2)))
    model.add(layers.BatchNormalization())
    model.add(layers.Dropout(0.2))
    model.add(layers.Conv2D(32, (3, 3), padding='same', activation='relu'))
    model.add(layers.MaxPooling2D(pool_size=(2,2)))
    model.add(layers.BatchNormalization())
    model.add(layers.Dropout(0.2))
    model.add(layers.Conv2D(64, (3, 3), padding='same', activation='relu'))
    model.add(layers.MaxPooling2D(pool_size=(2,2)))
    model.add(layers.BatchNormalization())
    model.add(layers.Flatten())
    model.add(layers.Dense(512, activation='relu'))
    model.add(layers.Dense(1, activation='sigmoid'))

optimizer = tf.keras.optimizers.Adam(0.001)
model.compile(optimizer=optimizer,
              loss='binary_crossentropy', # loss='categorical_crossentropy' if softmax
              metrics=['accuracy'])

return model

new_model = mynet_CNN_model()
new_hist = new_model.fit_generator(train_data_gen, epochs=20, validation_data=validation_data_gen)
```

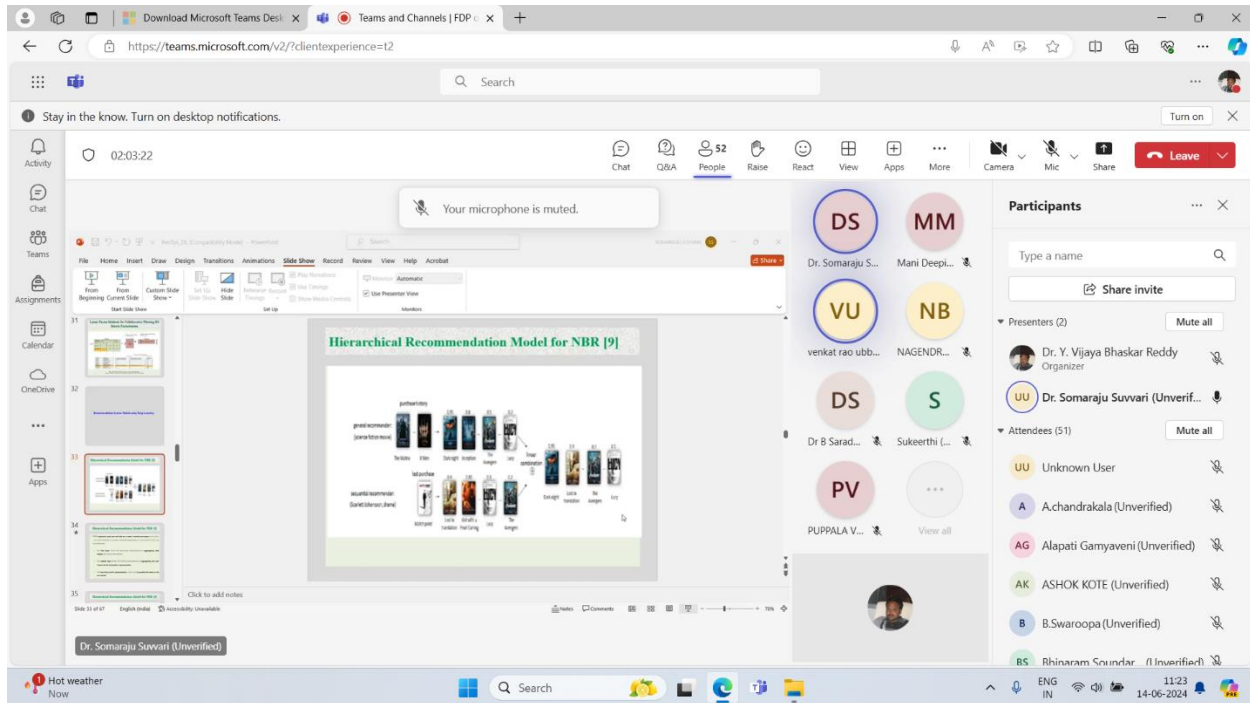
### *Day4 Session 2 Presentation by speaker Dr. Bhaskar Mondal*

### **Day5 --Session 1 (14/6/2024)**

This session is taken by **Dr. Somaraju Suvvari, Assistant Professor, NIT, Patna**. The session is covered Recommendation Systems and Recommendation Model.

#### **Topics Covered in the session:**

- Recommendation system.
- Recommendation Model.



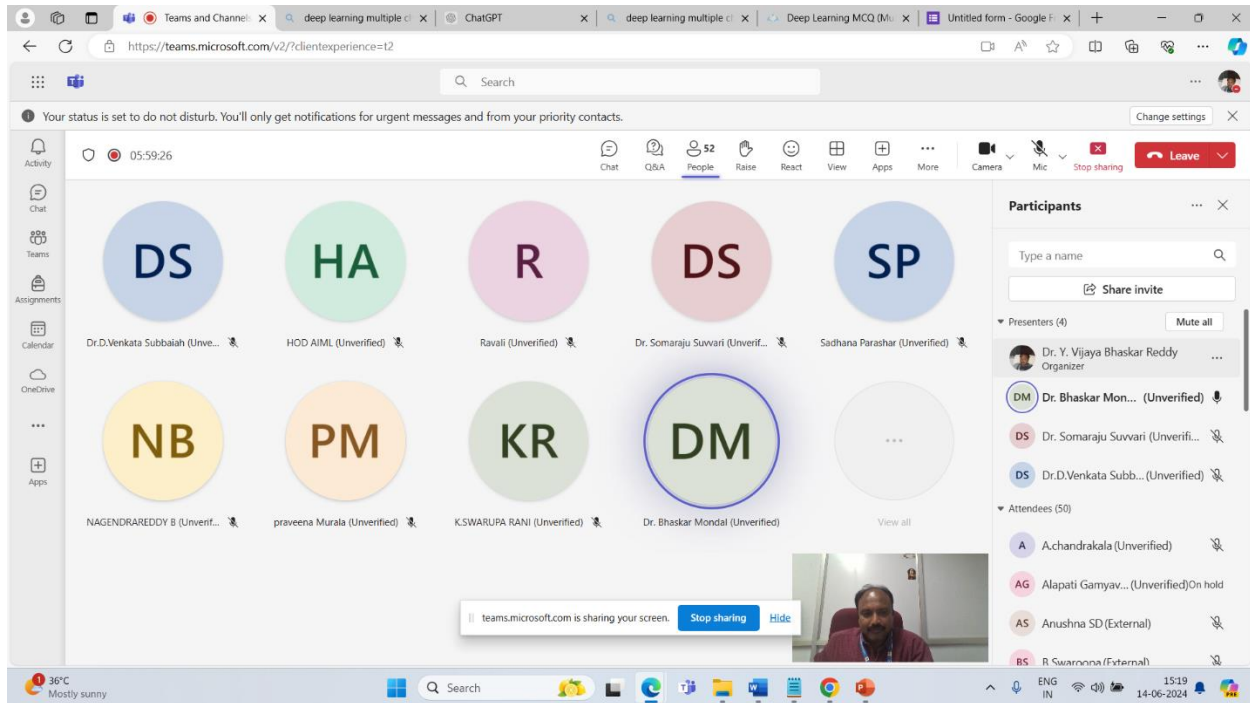
### *Day5 Session 1 Presentation by speaker Dr. Somaraju Suvvari*

## **Day5 --Session 2 (14/6/2024)**

This session is taken by **Dr. Somaraju Suvvari, Assistant Professor, NIT, Patna**. In The session speaker demonstrated Hands-on Session on Recommendation system.

### **Topics Covered in the session:**

- Hands-on Session on Recommendation system.



*Day5 Session 2 Presentation by speaker Dr. Somaraju Suvvari*

### **Valedictory Session:**

On the Valedictory Session, Dr. D.Veeraiah, Professor, HOD CSE Department and Convener of FDP joined the session as a Chief Guest along with the resource persons Dr. Bhaskar Mondal, Dr. Somaraju Suvvari, Dr. Prashant Wagambar Patil, Dr. Santhosh Kumar Vipparti, and Coordinators of FDP Dr.Y.Vijay Bhaskar Reddy, and Dr. J. Nageswara Rao, Associate Professor, CSE Department.

Dr. D. Veeraiah, Professor and HOD, CSE Department, in his valedictory addressing, thanked every participant for spending their valuable time and attending 5 days FDP. Also congratulated the Program co-ordinators Dr. Y.Vijay Bhaskar Reddy, Dr. J. Nageswara Rao for organizing the FDP in a successful manner.

Further, he appreciated all the Teaching and Non-Teaching Staff Members of CSE Department for promoting such kind of program for the faculties who attended from all over India. At the end of the valedictory session, vote of thanks was given by Dr. Y.Vijay Bhaskar Reddy and Dr. J. Nageswara Rao co-ordinators of the FDP in which he has been paid his gratitude towards all the participants who has spared their valuable time for attending this FDP. He also expressed the gratitude to the Resource Persons, Dr. Bhaskar Mondal, Dr. Somaraju Suvvari, Dr. Prashant Wagambar Patil, Dr. Santhosh Kumar Vipparti, for giving their valuable time for our participants and sharing their knowledge to them.

Nevertheless, he expressed his sincere thanks to Sri. G. Srinivasa Reddy, President, Dr. K. Appa Rao, Principal and Dr. D. Veeraiah, HOD, CSE Department.

“We are highly thankful to the Management, Principal and Head of the Department for giving us an opportunity to organize this FDP in our campus and hope we will find the support in future also for organizing such kind of activities.”

## ముగిసిన అధ్యాపక అభివృద్ధి శిక్షణా కార్యక్రమం

- అధ్యాప్న అంశాలు  
నేర్చుకోవడం ద్వారా మెరుగైన బోధన చేయవచ్చు

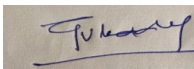

- ప్రిన్సిపల్ డాక్టర్ కె అప్పారావు  
భారత్ న్యూస్, మైలవరం

స్థానిక లకిరెడ్డి బాలిరెడ్డి ఇంజనీరింగ్ కళాశాలలో సి ఎన్ ఈ విభాగం ఆధ్వర్యంలో “డీవ్ తెర్నింగ్ అండ్ ఇట్స్ అప్లికేషన్స్” అనే అంశం పై ఐదు రోజులు పాటు జరిగిన అధ్యాపక అభివృద్ధి శిక్షణా కార్యక్రమం శనివారంతో ముగిసింది. ఈ ఐదు రోజుల కార్యక్రమానికి డా.ఎన్.సోమరాజు, పాట్నూ ఎన్ ఐ డి, డా.భాస్కర్ మొండారల్, ఎన్ఐఐడి, పాట్నూ డా.ప్రశాంత్ పాటిల్, డా.నంతోష్ కుమార్ విప్పర్తి ఐఐఐటీ, రోపర్ వారు కార్యక్రమానికి రిసోర్స్ పర్సన్స్ గా వ్యవహరించారు. చివరి రోజు కార్యక్రమంలో డా.ఎన్.సోమరాజు మాట్లాడుతూ రికమండేషన్ సిస్టం యొక్క ప్రాధాన్యతను మరియు డీవ్ తెర్నింగ్



అప్లికేషన్స్ మీద హాండ్స్ ఆన్ ట్రైనింగ్ డెమో ద్వారా వివరించారు. కళాశాల ప్రిన్సిపాల్ డా.కె.అప్పారావు మాట్లాడుతూ ఇలాంటి కార్యక్రమాల ద్వారా అధ్యాపకులు అధ్యాప్న అంశాలను నేర్చుకొని తద్వారా విద్యార్థులకు మెరుగైన బోధన చేయడంలో ఎంతగానో ఉపయోగ పడాలనే ఉద్దేశంతో ఈ శిక్షణా తరగతులు నిర్వహిస్తున్నట్లు తెలిపారు. ఈ అవకాశాన్ని పూర్తిగా వినియోగించుకొని మంచి విద్యా బోధన

చేయుటయే గాక విద్యార్థులకు మంచి భవిష్యత్తు ఇచ్చిన వారమవుతామని తెలిపారు. ఈ కార్యక్రమానికి కన్వీనర్ గా సి.ఎస్.ఈ విభాగాధిపతి డా.డి.వీరయ్య కో ఆర్డినేటర్ గా డా.వై విజయ భాస్కర్ రెడ్డి వ్యవహరించారు. ఈ కార్యక్రమంలో కళాశాల ప్రిన్సిపాల్ డా.కె.అప్పారావు, చైన్ ప్రిన్సిపాల్, డీన్స్ మరియు అధ్యాపకులు పాల్గొన్నారు.





Coordinators	Convener	Principal
(Dr. Y.V.Bhaskar Reddy) (Dr. J. Nageswara Rao)	(Dr. D. Veeraiah)	(Dr. K. Appa Rao)