

**Department of
ELECTRONICS AND COMMUNICATION ENGINEERING**

**Report
On
A One Week Workshop Schedule
On
“Machine Learning/Deep Learning Algorithms for Image
Processing Applications Using Python & MATLAB”
(16th October 2023 to 21st October 2023)**

The Department of ECE, NESIP Team successfully conducted five days workshop on "**Machine Learning/Deep Learning Algorithms for Image Processing Applications Using Python & MATLAB**" for IV B.Tech students on **16th October 2023 to 21st October 2023**. The aim of this workshop is to provide an insight on importance of Machine Learning/Deep Learning Algorithms for digital image processing and speech processing applications. The workshop comprises of theoretical lectures delivered by department faculties and also live demonstration of the software and various toolboxes. Total 30 students were registered for the workshop.

The students got an exposure to MATLAB coding, Python coding, signal processing and image processing toolboxes. As an outcome of the workshop, the students were able to implement a programming code, design automotive models using MATLAB and Python, process image, audio and speech signals and utilize Machine Learning tools.

Dr. V. Sravan Kumar, Mrs.K.MADHAVI, Dr. S.Karthick, Mrs.E.Suneetha, Mr.N.Suresh Reddy and, Mr.Ch.Phanidra acted as Faculty Coordinators for the five day workshop.

Day-1:

The workshop was inaugurated by Director of NNRG, Dean-School of Engineering and Head of the Department, ECE in the ECE seminar hall at 9:30am.



Dr. S Ravi Chand, HoD-ECE
Addressed the gathering



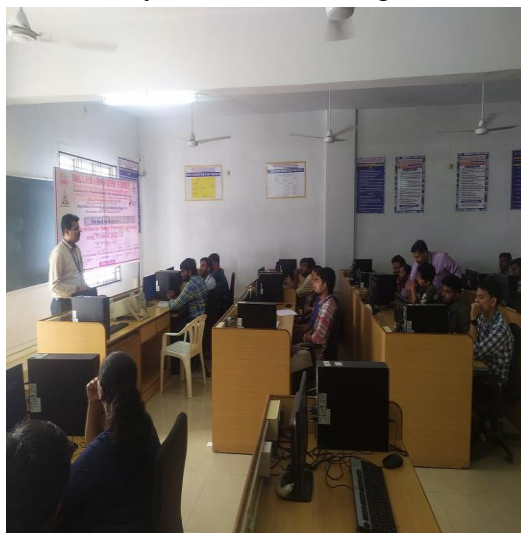
Dr. C.V. Krishna Reddy,
Director, NNRG addressed
the gathering



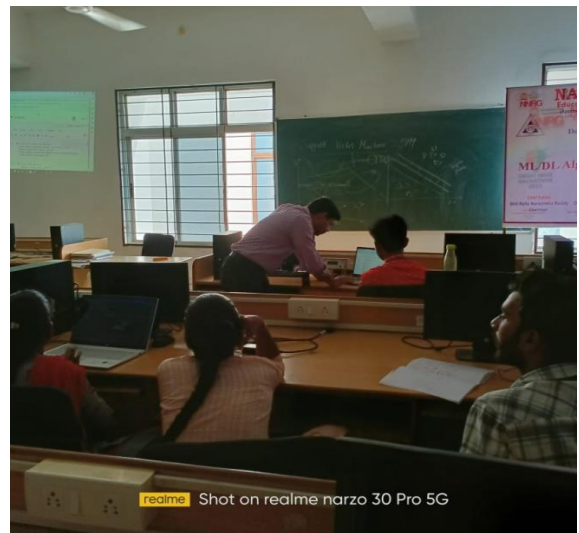
Dr. G. Janardhana Raju,
Dean-SoE, addressed
the gathering

In the morning session after the inauguration **Dr. S. Ravichand** as Expert Talk Speaker delivered the “Basic concepts, trends, applications and opportunities of Machine Learning/Deep Learning algorithms”

In the afternoon session Dr. V. Sravan Kumar as resource person delivered the “DIP Algorithms” followed by hands-on training on the MATLAB software.



Dr. S. Ravichand as resource person
Delivered the concepts of “Basics of MATLAB”



Hands-on by students about Basics of
MATLAB

Day-2:

In morning session1, resource person **Dr. V. Sravan Kumar** delivered the theoretical session on DIP Algorithms like image enhancement, thresholding techniques, image segmentation, in session2, resource person **Dr. V. Sravan Kumar** delivered the theoretical session on DIP Algorithms like histogram, histogram equalization, brightness and contrast adjustments.

Afternoon session is “Hands On Training on MATLAB Software”



Dr.V.Sravan Kumar, Assoc.Prof. Delivering DIP Algorithms as resource person

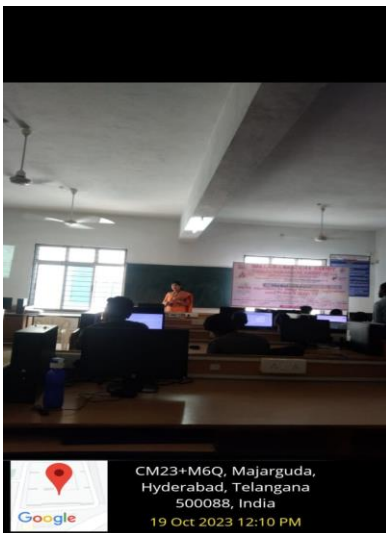


Students Practicing “MATLAB Simulink” in the Laboratory

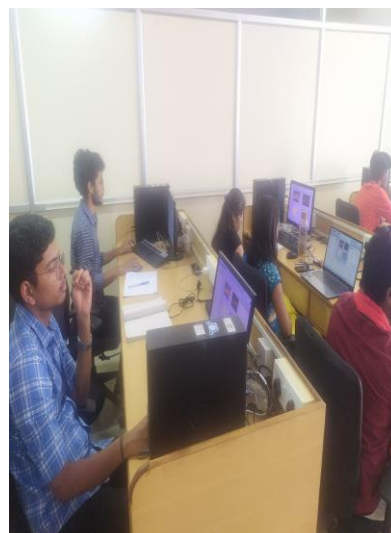
Day-3:

In the morning session1, resource person Mrs.K.Madhavi, Ass.Prof, delivered lecture on "CNN –LeNet5”, in the session2, resource person Mrs.K.Madhavi, Asst.Prof, delivered lecture on "AlexNet & VGG net algorithms”.

In the afternoon session, implementation of coding was done on “ML/DL algorithms” with hands-on training.



Mrs.K.Madhavi,Assistant Professor,as resource person

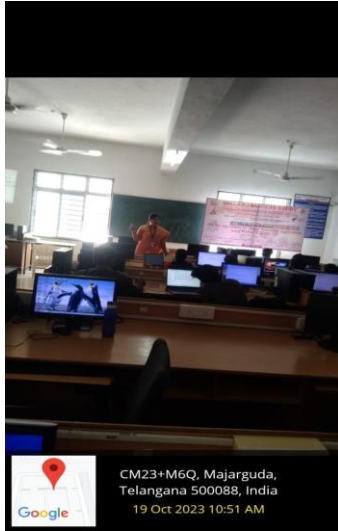


Hands on session on ML/DL Algorithms

Day-4:

In morning session1, resource person Mrs.K.Madhavi, Asst.Prof. delivered lecture on "Google Net & Rest Net", in session2, resource person Mrs.K.Madhavi, Asst.Prof. delivered lecture on "GAN algorithm".

In the afternoon session, practical implementation session is handled on "speech and audio processing".



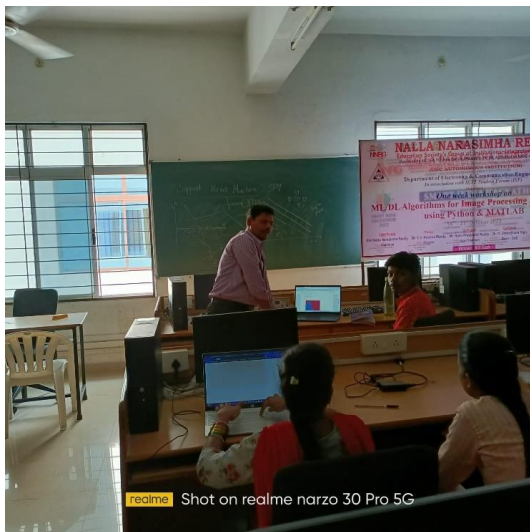
Mrs.K.Madhavi,Asst. Prof of ECE,
as resource person



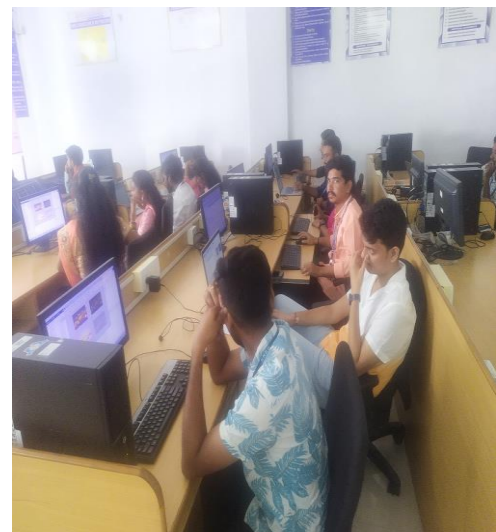
Hands on session on Algorithms

Day-5:

In the morning session, resource person Dr.S.Karthick delivered a lecture on "RNN & U-net algorithms" followed by hands-on training during afternoon session.



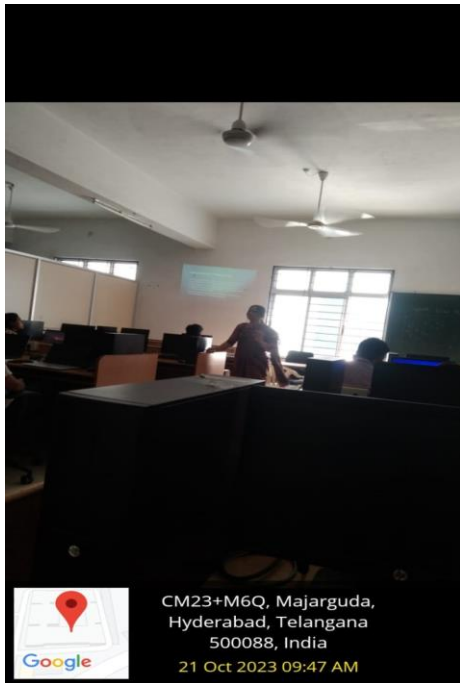
Dr.S.Karthick, Asst.Prof as resource person



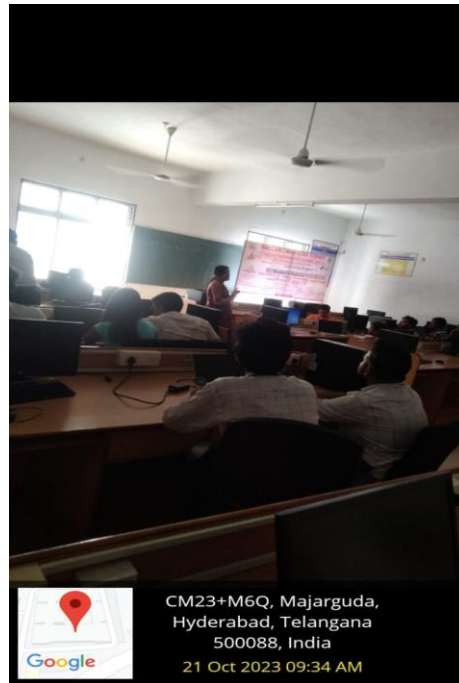
Hands-on Training on signal processing
toolboxes

Day 6

In the morning session, resource person Mrs.E.Suneetha, Assoc.Prof. delivered lecture on "Applications and case studies of AI/ML Algorithms".



Mrs.E. Suneetha, Associate Professor of ECE,
As resource person



Hands on session on python

Finally, the workshop ended with a valedictory session, in the presence of Dr. C.V. Krishna Reddy- Director of NNRG, Dr. G. Janardhana Raju- Dean School of Engineering and Dr. S.Ravi Chand- Head of ECE Department. Student participants received their certificates from the Director.



Group Photo with Faculty and Participants of the Workshop



Dr.V.Sravan Kumar,
Coordinator of the workshop,
Appreciated by Director and HoD



Student giving feedback on
workshop during valedictory
session



Resource persons, appreciated
by Director and HOD-ECE

Outcomes of the Workshop:

After the completion of workshop, the students were able to

- Code a program in the MATLAB, compile, debug and visualize the output
- Develop a ML/DL Model using python.
- Utilize DIP, ML/DL tool boxes effectively
- Process speech, image and audio signals and analyze the output.

Place: NNRG,Hyderabad

Date: 30/10/2023

Convener & HOD-ECE