Department of
ELECTRONICS AND COMMUNICATION ENGINEERING

Report
On
A One Week Student Development Program
On
"Machine Learning/ Deep Learning Algorithms for Image Processing Applications Using Python & MATLAB"

(18th June 2024 to 22nd June 2024)

The Department of ECE, NESIP Team successfully conducted five days student development program (SDP) on **" Machine Learning/ Deep Learning Algorithms for Image Processing Applications Using Python & MATLAB"** for III B.Tech students on **18th June 2024 to 22nd June 2024**. 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 43 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 and utilize Machine Learning tools.

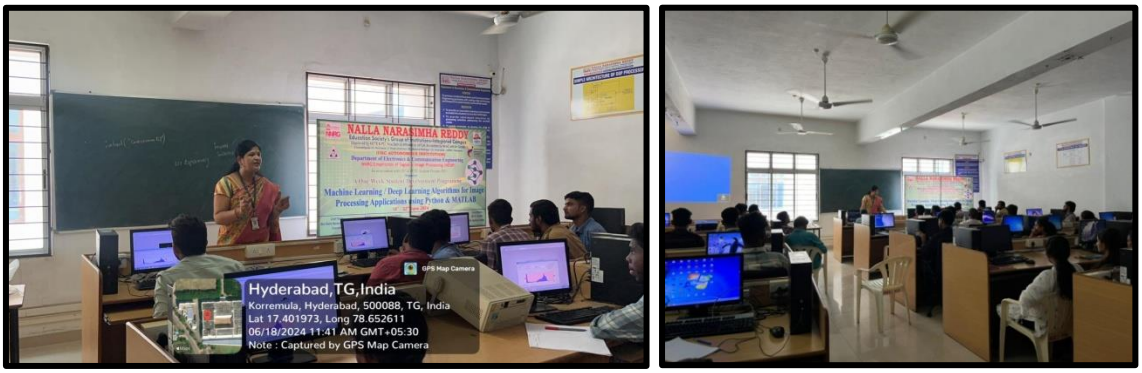
Dr. V. Sravan Kumar, Mrs.K.MADHAVI, Dr. S.Karthick, Mrs.E.Suneetha, Mr.N.Suresh Reddy, Mr.Ch.Phanidra and Mr. Abraham Thomas acted as Faculty Coordinators for the five day SDP.

Day-1:

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

Dr.G.Janardhana Raju, Dean-SoE, Dr. S Ravi Chand, HoD-ECE addressed the gathering

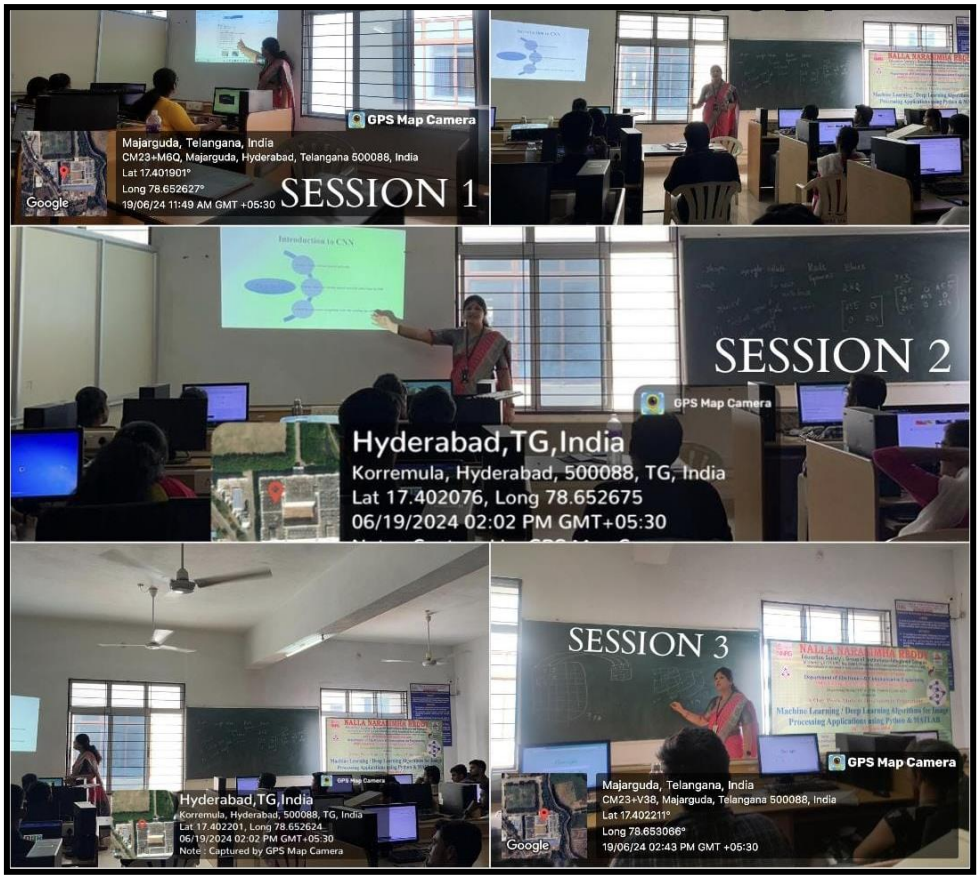
In the morning session after the inauguration Mrs. K. Madhavi as resource person delivered theoretical and hands on session using MATLAB on “Introduction to Image processing”. Afternoon session is “Loading and Displaying Images using GUI/MATLAB”



Mrs.K.Madhavi, Asst. Prof. Delivering a theoretical and hands on session with MATLAB for Image Processing

Day-2:

In the morning 1st session Mrs.K.Madhavi as resource person delivered a theoretical and hands on session using Python (Google Colab) on “Loading and Displaying Images Using Python”. In morning 2nd session Mrs.K.Madhavi as resource person delivered the “Introduction to CNN Algorithm”. In afternoon “Hands on session in CNN” using Python.



Mrs.K.Madhavi , Asst. Prof. Delivering a theoretical and hands on session in CNN using Python

Day-3:

In the morning 1st and 2nd session Dr.V.Sravan Kumar as resource person delivered a theoretical and hands on session with MATLAB on “Image Filtering & Image Enhancement”. In the morning 3rd session Mr. Abraham Thomas as resource person delivered a theoretical and hands on session with MATLAB on “Introduction to Speech Processing and Analysis”. In afternoon session Dr.V.Sravan Kumar as resource person delivered a theoretical and hands on session with MATLAB on “Image Segmentation”.

Dr.V.Sravan Kumar, Assoc.Prof. and Mr. Abraham Thomas, Asst.Prof. Delivering session as resource person

Day-4:

In the morning session Mr. N. Suresh as resource person delivered a theoretical session on “Introduction to Machine Learning”. In afternoon session “Hands on Session using MATLAB & PYTHON” by NESIP Team.

Mr. N. Suresh, Asst. Prof. Delivering a session on Introduction to Machine Learning and NESIP team in hands on session

Day-5:

In the morning session “Hands on Session using MATLAB & PYTHON” by NESIP Team. Afternoon session assessment done for students.

Finally, the workshop ended with a valedictory session, in the presence of Dr. C.V. Krishna Reddy, Director, Dr. G. Janardhana Raju, Dean School of Engineering, Dr. B. Hari Prasad Naik and Dr. Ravi Bolimera.

Team NESIP Group Photo at Valedictory Session

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: 27/06/2024

Co-coordinators Coordinator & SPoC R&D Coordinator HoD ECE