Department of Electronics and Telecommunication Engineering

Report on ISTE Approved One Week Short Term Training Program on

"Research with MATLAB and Simulink"

Organized by Electronics and Telecommunication Department

The objective of the Research with MATLAB and Simulink training program is to address the research, development and design problems and advance their solutions in machine learning and deep learning with MATLAB and Simulink for conducting various research. This STTP provides comprehensive coverage of introduction to Artificial Intelligence, Machine learning, deep learning and antenna design while providing opportunities for Hands-on practical's on MATLAB and Simulink.

The purpose of this STTP is to bring together researchers & PG students from academia and Engineers & Scientists from industry and R&D institutes to have discussions on various ways in which MATLAB and Simulink tools can be used to carry out research.

This program also deals with the basic understanding, designing and simulation of the MIMO wireless systems which will provide practical exposure to the participants. The STTP aims at equipping teachers with skills and knowledge in order to create a better society by guiding, training and motivating the students to take up research projects.

Topics Covered in STTP on "**Research with MATLAB and Simulink**"

- Introduction to Artificial Intelligence.
- Exploring recent MATLAB toolboxes .
- Multilayer perception and convolutional neural networks.
- Deep learning with Image data using MATLAB
- Design and implementing MIMO wireless systems with MATLAB And Simulink

At the end of STTP participants are able to

- Hands on Practice on Various MATLAB toolboxes and Simulink.
- The participants shall get to learn the basics MATLAB toolboxes and Simulink.
- After the completion of this course the participants will have knowledge of use of MATLAB Simulink and its uses in different research areas.

Department of Electronics and Telecommunication Engineering

- The participants shall learn how to set parameters and test the output in Simulink.

Research work in various areas require multiple software, and MATLAB provides solution to most of the research areas link antenna and microwave, optical communication, image processing, wireless networks etc. As faculties of engineering college, the need of better understanding of MATLAB platform to carry out research in various areas felt necessary. With keeping this as an intension the ISTE approved STTP was conducted from 6th November to 13th November, 2019 in Electronics and Telecommunication Engineering Department, VIVA Institute of Technology.

Details of the speakers is as under

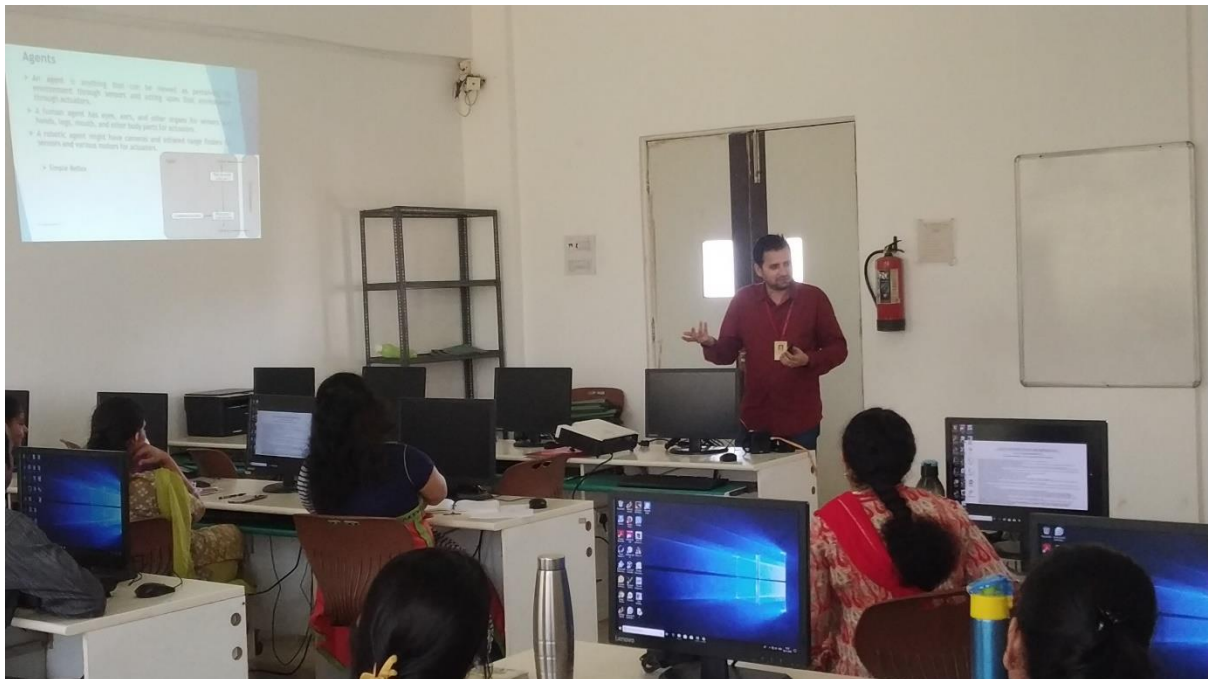| SN.	Name of the Guest Speaker	Details of the Speaker	Topics Addressed	Date
1	Dr. Tatwadarshi Nagarhalli	Assistant Professor, VIVA Institute of Technology	Introduction to AI	6/11/2019
2	Mr. Nitin Rai	Application Engineer, Mathworks	Modelling architecture of RF fronts, Antenna and array design in MATLAB and Simulink	7/11/2019
3	Mr. Suraj Gawande	Application Engineer, DesignTech	Classification of neural Networks, Deep learning with Image data	8/11/2019
4	Mr. Santosh Chapneri	Assistant Professor, St Francis Institute of Technology, Borivali	Multilayer perception and convolutional neural networks	11/11/2019

On 5th day of STTP all faculties visited RAW Engineering. Raw Engineering is a innovative digital solutions and services. They explained how they provide Real-Time, Engaging Experiences and Network DevOps projects to the government and private companies. They explained faculties about the projects/ research areas that should be undertaken by the educational institutions which included API-based systems, mobile apps using JAVA, Web development and Artificial Intelligence.

Department of Electronics and Telecommunication Engineering

Participants were the teaching faculty of Engineering College. Total of 11 faculty members participated in the One week Short Term Training Program conducted.
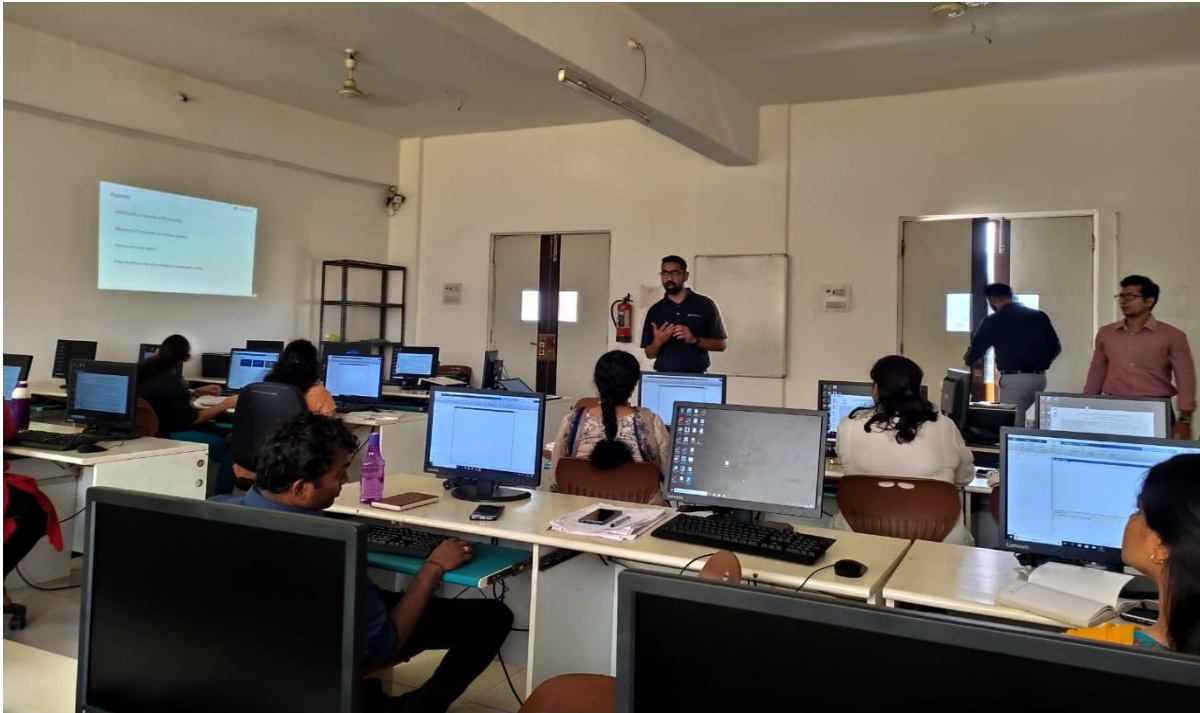
On the last day of STTP institute had received the feedbacks from the participants that they have learned and enhanced their knowledge in this STTP and they would always want to attend this kind of STTP in this institute once again. The overall feedback of the Training Program was encouraging and was highly rated by the participants.
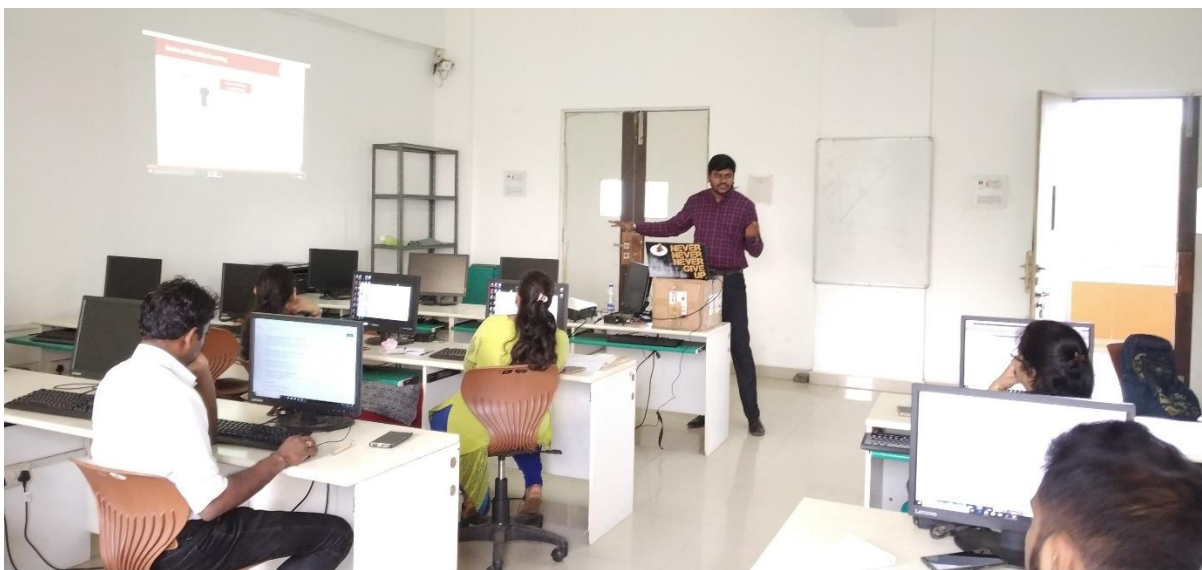

Dr. Tatwadarshi Nagarhalli conductions a session on Artificial Intelligence on Day 1.

Late Shri Vishnu Waman Thakur Charitable Trust's

VIVA Institute of Technology

At: Shirgaon, Virar (East), Tal: Vasai, Dist: Palghar-401303, Maharashtra.

Website: www.viva-technology.org

Department of Electronics and Telecommunication Engineering

Mr. Nitin Rai conducting a session on Design of Antenna Arrays using MATLAB and Simulink.

Mr. Suraj Gawande conductiong a session on Machine learning using MATLAB.

Department of Electronics and Telecommunication Engineering

Mr. Santosh Chapneri Conducting a session on convolutional neural networks.

Staff members with the guest speakers