

**Vivekanand Education Society's Institute of Technology
Department of Electronics and Telecommunication**

**Report On
AICTE - ISTE Approved
One Week
Short Term Training Program
on
Machine Learning & Deep Learning
(30/12/2019 to 04/01/2020)**

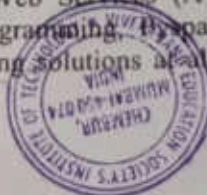
Department of Electronics and Telecommunication organized one week Short Term Training Program (STTP) on "Machine Learning and Deep Learning" during 30th December, 2019 to 4th January, 2020. The objective of the STTP was,

- 1) To introduce fundamentals of data mining, machine learning and deep learning with real-time applications.
- 2) To provide useful platform for faculty, researchers and students to update their knowledge
- 3) To focus on exploring various research opportunities and challenges in the field of machine learning, deep learning, computer vision and its applications.



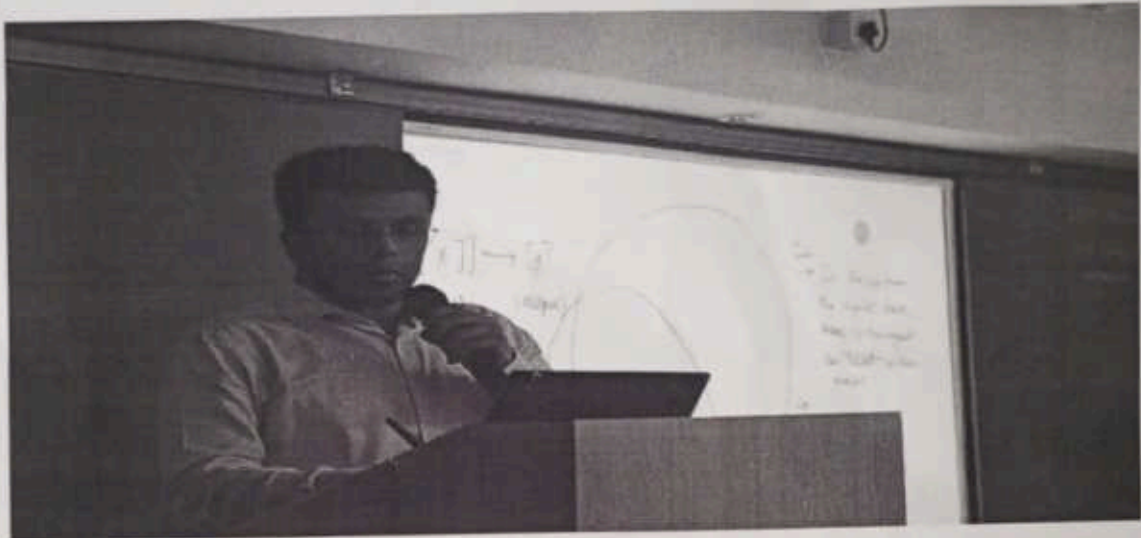
Mr. Amit Mishra (Senior AI & ML Engineer) Edulab was speaker and trainer for 4 days. He has Expertise in the field of Artificial Intelligence & Machine Learning, Data Science using Python, R Programming, Cloud Computing with Amazon Web Services (AWS), Amazon Elastic Map Reduce (EMR), Talend, GoldenGate, Python programming, PySpark, Scala of 6+ Years. He assessed, designed, developed and delivered training solutions at all levels of professionals for

Ranjana B. Kulkarni



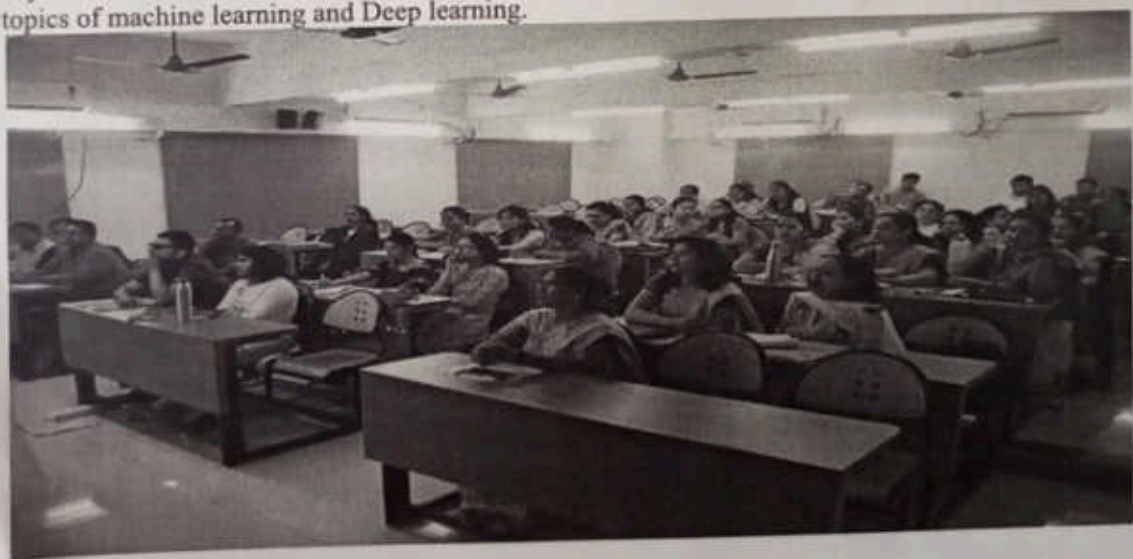
Ranjana

multiple internal support groups and external clients. He also organized weekly, monthly training sessions for the corporate working professionals as in collaborations with working company & as freelancer trainer. He delivered training program for official Oracle University certification program & Cloudera Certification training programs. Mr. Pratik conducted session on natural language processing on day 5.



Total 40 Faculties from Department of Electronics and Telecommunication, VESIT along with faculty from other departments of VESIT and various institutes from Mumbai actively participated in the training program.

The program commenced with the inauguration of the STTP by Mr. Amit Mishra (Senior AI & ML trainer) Eduxlab on 30th December 2019. Dr. Ramesh Kulkarni Deputy head welcomed the guest and participant and addressed the need of STTP. Dr. (Mrs.) Ranjan Bala Jain, Professor, Dept of Electronics and Telecom and coordinator of STTP, briefed about the STTP and its objectives. In all 15 sessions were conducted which were blend of theory and practicals of various topics of machine learning and Deep learning.



On day one, sir explained the difference between artificial intelligence, machine learning and deep learning with various examples. Afterwards guidelines were given for the installation of anaconda. In practical sessions, Hands on training on Primitive Data Types, Data structures, Lists, Slicing of the Lists, Tuples, Dictionary, Conditional Statements (for, if) etc. were narrated. In the second part of the practical session, Importing different Libraries, File handling like reading file from location, functions like read(), describe(), info(), head(), isnull().sum(), and plotting of graphs like Heatmap Graph etc. were explained in a very simple way.

On day 2, Important concepts like cleaning and preprocessing of data, determination of outliers, Q1,Q2,Q3 with box plots were illustrated. Then feature extraction using correlation function, model training by linear regression, model testing by calculation of cost function and optimization of model by Gradient descent algorithms were taught in detail. Hands on training on the same were conducted to understand the concepts in a better way and the accuracy of trained model was computed with different data sets..



Installation of tensor flow and keras were demonstrated on day 3. The need of logistic regression algorithm, its cost function was explained in length. The important concept of Decision tree, KNN algorithm, entropy, information gain, overfitting etc. were outlined with suitable examples and the same were practiced by participants using MNIST digit images, IRIS and diabetes data set.

Day 4 was devoted to neural network and deep learning. The participants were introduced the terminology like neurons, dendrites, synapses, terminal buttons etc. related to neural networks. Next to this, the basic artificial neuron model to perform logic operations was described. On the same day participants also learned tensor flow concepts, related functions and usage of activation function. To solve the problems of image classification, face recognition, object detection etc. Convolution neural network model was discussed and tested with data set of fashion MNIST images.

Day 5 was conducted by Mr. Pratik on Natural language processing used for text processing, website reviews and many more. So overall, it was a rigorous training program, fine details of each and every aspect were covered by both experts.



STTP was then concluded by distribution of certificates, mementos and 16 GB pen drive loaded with books on machine learning, python, anaconda installation set up and study material given by experts. Participants gave their valuable feedback about the sessions conducted in the STTP, and how it will benefit them in their respective fields. Coordinator, Dr. Ranjan Bala Jain read the report of STTP and Head of Department, Mrs. Shoba Krishnan, addressed the participants and dignitaries with a vote of thanks and concluded the valedictory session.

Ranjan

Resource Person

The speakers would be eminent personalities from industries and academia.

Registration Fees

The participants are required to pay a fee of Rs. 3000/-.

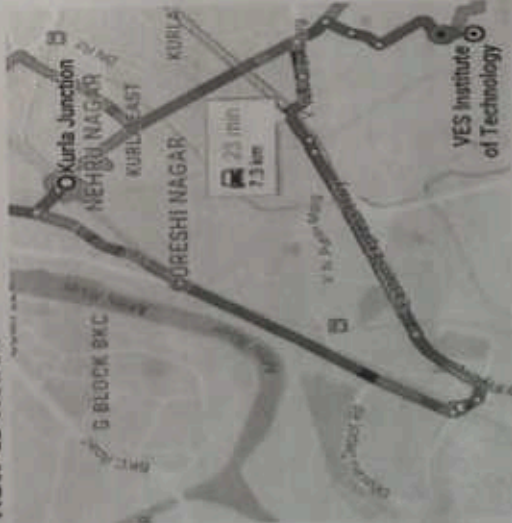
Who can attend ?

- Faculty of Engineering from Degree, Diploma & MCA Colleges
- Research Scholar
- Post Graduate
- Industry Representative

Venue

V.E.S. Institute of Technology, Hashu Advani Memorial Complex, R.C.Marg, Collectors Colony, Mumbai -74

How to Reach



Patrons

Shri B. L. Boolani, President, VES Trust
Shri Amar Asrani, Secretary, VES Trust
Shri Suresh Maikani, VES Trust
Dr. (Mrs.) J. M. Nair, Principal, VESIT
Dr. (Mrs.) M. Vijayalakshmi, Vice Principal, VESIT

Advisory Committee

Mrs. Shoba Krishnan (Head, EXTC Dept.)
Dr. Ramesh K. Kulkarni (Deputy Head, EXTC Dept.)
Dr. Nadir N. Charniya

Course Coordinator

Dr. (Mrs.) Ranjan Bala Jain
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Course Co-Coordinator

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Organizing Committee

Mrs. Nandini Ammangi
Mrs. Ashwini Sawant
Mr. Mrugendra Vasmatkar
Mrs. Pallavi Gangurde
Mrs. Nusrat Ansari
Mr. Sanjay Mirchandani
Mr. Chintan Jethva
Mrs. Ardi Sawant
Mr. Gaurav Tawde
Mrs. Neeta Chavan
Mrs. Himali Patel
Mr. Ajinkya Valanjoo

For enquiries, contact Co-Coordinator.

**Vivekanand Education Society's
Institute of Technology**



EDUXLABS
edu's Xperts (Eduip Solution)

**Department of
Electronics & Telecommunication
&
Eduxlabs**

Organize

**AICTE - ISTE Approved
One Week**

Short Term Training Program

on

**Machine Learning
&
Deep Learning**

**VESIT-ISTE Chapter MH-144
(30th Dec, 2019 to 4th Jan, 2020)**

V.E.S.I.T, Hashu Advani Memorial Complex,
R. C. Marg, Collector's Colony, Chembur,
Mumbai - 400 074

Phone: 022 - 61 532 532/500
Fax: 022 - 61 532 555



About VESIT

Vivekanand Education Society's Institute of Technology (VESIT) established in 1984, is one of the premier engineering colleges affiliated with the University of Mumbai. VESIT offers Bachelors programs in engineering under the following streams: Electronics, Electronics & Telecommunication, Computer, Instrumentation and Information Technology.

In addition VESIT offers Master of Engineering in Electronics & Telecommunication Engineering, Instrumentation and Control, and Information Technology streams and Master of Computer Application. VESIT is a recognised Ph.D. Centre for Engineering and Technology of University of Mumbai, and also a Lifelong Learning Centre.

Course Objectives

1. The objective of the STTP is to introduce fundamentals of data mining, machine learning and deep learning with real-time applications.
2. This STTP will be a very useful platform for faculty, researchers and students to update their knowledge
3. This STTP also focuses on exploring various research opportunities and challenges in the field of machine learning, deep learning, computer vision and its applications.

Course Outline

The training programme comprises of lectures and hands-on training on Machine Learning and Deep Learning techniques for the analysis, design and development of methods for the classification of patterns, objects, signals and processes.

Course Content

Lecture and lab sessions on

1. **Getting Started with Machine Learning**
 - Applications of Machine Learning
 - Opportunities & challenges in Machine Learning
2. **About the dataset Processing**
 - Importing the Libraries and Dataset
 - Missing Data, Categorical Data
3. **Regression Techniques for Information Retrieval**
 - Linear and Polynomial Regression
 - Support Vector Regression (SVR)
 - Decision Tree Regression
4. **Classification Techniques**
 - Logistic Regression
 - K-Nearest Neighbors (K-NN)
 - Support Vector Machine (SVM)
 - Image Classification
5. **Artificial Neural Networks & Deep Learning**
 - Foundations of Neural Networks
 - The Activation Function
 - Gradient Descent, Stochastic Gradient Descent, Backpropagation
 - Introduction to deep learning
 - Deep neural networks
 - Introduction to Tensor flow
 - Convolutional neural networks
6. **Natural Language Processing**
 - Libraries used for NLP
 - Research Trends in NLP
 - Application of NLP for real world applications.

REGISTRATION FORM

One week Short Term Training Program on

Machine Learning & Deep Learning

VESIT- ISTE Chapter MH-144
(30th Dec, 2019 to 4th Jan, 2020)

Organized by

Vivekanand Education Society's
Institute of Technology

Name: _____
Designation: _____
Organization Name: _____
Address for Communication: _____

Highest Academic Qualification: _____
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Email: _____
DD No./Cheque No./Cash: _____
Signature of Applicant: _____
Date: _____
Signature & Seal of Head of Institution: _____
