



**FACULTY DEVELOPMENT PROGRAMME (FDP) ON  
Machine Learning Using Python**

(29<sup>th</sup> Nov 2018 to 5<sup>th</sup> Dec 2018)



Organised by  
**Department of Information Technology**  
**Vasavi College of Engineering (Autonomous), Hyderabad**  
in association with NIT, Warangal.

Under the scheme of **Electronics & ICT Academy**

(Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI)

**Preamble:**

"Electronics & ICT Academy" was set up at NIT Warangal with financial assistance from MeitY, Govt. of India (GoI). The jurisdiction of this academy is Telangana, Andhra Pradesh, Karnataka, Goa and Puducherry states and UT of Andaman & Nicobar Islands. This academy role is to offer faculty development programmes in standardized courses and emerging areas of Electronics, Information Communication Technologies, training & consultancy services for Industry, Curriculum development for Industry; CEP for working professionals, Advice and support for technical incubation and entrepreneurial activities.

**About the Workshop:**

The proposed FDP introduces concepts of Python and Machine Learning. It covers an overview of Machine Learning algorithms and their applications. The training comprises of a series of lectures and practical exercises. The participants obtain deep insights of machine learning, which in turn helps them to apply it in practice or as a foundation to a deeper study in this area.

**Major Course Contents:**

- Python programming: Introduction
  - Mutable and Immutable
  - Introduction to basic (native) data structure
  - Difference between list and array
- Analytics around / using Python
  - Numpy / Pandas / Scipy / Matplotlib
  - Vector and array manipulation
  - Plotting, functions, input and output
  - Hands on session using Python
- Machine Learning: Introduction
  - Supervised Vs Unsupervised Learning
  - Linear Regression, • Decision Trees, KNN
  - Multilayer Neural Network, Back propagation
  - Bayesian Networks, SVM
  - Clustering :K Means
  - Python API's for implementing Machine Learning Algorithms
  - Case Studies using Python

**Course Evaluation:**

Continuous assessments at logical intervals. Assessment includes MCQ's, Fill in the Blanks, True/False and/or scenario based questions.

**Faculty conducting this programme:**

The programme will be conducted by the faculty members from NIT Warangal; Academicians in the concerned field from IITs/NITs/IIITs are invited to deliver lectures in the programme.

**Eligibility:**

The programme is open to faculty of Engineering Colleges, MCA Colleges and other allied disciplines in India. Industry personnel working in the concerned /allied discipline can also attend.

**Registration Fee Particulars:**

Faculty and Research Scholars	Rs. 2500/-
Faculty of SC/ST Category	Rs. 1875/- (SC/ ST participants should submit the copy of their caste certificate to claim the concession along with application form)
Industry Participants	Rs. 7500/-

**SC/ST concession is only for faculty on first-come-first-give-concession. Research Scholars are not eligible for SC/ST concession.**

**Payment:**

The registration fee should be paid in the form of DDs/online transfer using the following details:

DD Details	Online Transfer Details
Demand Draft in favor of "Director, NIT Warangal" payable at NIT Warangal	Account Name: <b>Electronics &amp; ICT Academy NITW Account No:</b> 62423775910 and IFSC: SBIN0020149

**Travel and Accommodation:**

All the selected participants will have to make their own arrangements for their accommodation. No TA will be paid for the participants. Working Lunch, Tea & Snacks would be provided during the Training in the campus.

**How to apply:**

A filled in form of application in the prescribed format duly signed and sponsored by appropriate authorities (along with demand draft) should reach the coordinator by speed-post. It is also mandatory to send scanned application form and demand draft through e-mail to [hodit@staff.vce.ac.in](mailto:hodit@staff.vce.ac.in) as selection will be intimated only through mail.

**Selection Criteria:**

Selection will be done based on **first-cum-first-serve basis** and the confirmed candidates will be notified immediately. The maximum number of participants will be **50 (fifty)**. Additionally 10 participants from industry are allowed to participate. The list of selected participants will be notified in the institute web site [www.nitw.ac.in](http://www.nitw.ac.in) and also will be sent to their personal e-mail ids. In case a candidate is not selected, the demand draft will be sent back. Candidates will be issued satisfactory certificates on successful completion of the course. Reservations are followed for selecting candidates as per GOI norms.

**Important Dates:**

Last date (Application & DD)	20-11-2018
Selection List by E- mail	23-11-2018
Duration of program	29-11-2018 to 05-12-2018

**About the Institutes:**

**National Institute of Technology** (formerly Regional Engineering College), Warangal is an Institute of National Importance and fully funded by MHRD, Govt. of India. It offers various programmes B.Tech. In eight branches, PG and M.Tech. Programmes and also Ph.D. programmes. Further, the institute organizes FDPs, Workshops and Conferences on cutting-edge technologies regularly throughout the year. All B.Tech and M.Tech programmes of NIT Warangal are NBA accredited.

**VCE:** Founded in 1981 by Vasavi Academy of Education, **Vasavi College of Engineering (VCE)** represents a rich tradition of excellence in technology-based education. A premier-league institution among the affiliates of Osmania University, VCE owes its vision to Sri Pendekanti Venkata Subbaiah, a veteran statesman of Independent India. VCE has been conferred with Autonomous Status by the University Grants Commission (UGC), New Delhi and Osmania University, Hyderabad for a period of six years with effect from the Academic Year 2014-15, for all the UG and PG Programmes. The College is implementing Choice Based Credit System (CBCS). **The Department of Information Technology** was established in the year 2000. The department offers a 4-year B.E Degree programme in Information Technology, with an annual intake of 120 students, with specific emphasis on emerging technologies and empirical mode of learning. The Department was re-accredited by NBA from 2017-20.

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**Report on Faculty Development Programme on  
"Machine Learning using Python" at Vasavi College of Engineering  
(29<sup>th</sup> November – 5<sup>th</sup> December 2018)**

**Day 1: 29<sup>th</sup> November 2018 (Thursday)**

The FDP started on 29-11-2018 with an introductory session at 10.00 A.M., the Chief Guest Sri Saya Srineevasulu articulated the importance of faculty development programs that are conducted in latest technologies by E&ICT Academy, Warangal. After the inaugural session, Sri Saya Srineevasulu, Industry Expert, Bangalore conversed about introduction to Object Oriented Programming with PYTHON: Creating Classes and Objects, Multithreading, Errors & Exception Handling. In the afternoon session, he elucidated Database Connectivity with PYTHON: Establishing Database Connectivity MySQL, Oracle, and Performing Database Transactions (Inserting, Deleting, and Updating the Database).

**Day 2: 30<sup>th</sup> November 2018 (Friday)**


Sri Saya Srineevasulu continued his talk on Friday, with the topics: Advanced Features of Python, Comprehension and Generators. In the afternoon session, Modules, Packages, Standard Python Modules, Packages and Standard Python Modules.

**Day 3: 1<sup>st</sup> December 2018 (Saturday)**

Prof R B V Subramanyam, Head of CSE, NIT, Warangal delivered a lecture on Introduction to Machine Learning; Supervised Vs Unsupervised Learning; Examples, Overview of Classification & Clustering. In the afternoon session, he continued his lecture on Link Prediction, SVM and PCA.

**Day 4: 3<sup>rd</sup> December 2018 (Monday)**

The forenoon session was handled by Dr S Nagesh Bhatt, IDRBT, Hyderabad articulated about Multi-Layer Neural Networks; Back Propagation, Overview of Machine Learning packages in Python. In the afternoon session, he continued his conversation on Bayesian Networks and Python APIs for Machine learning Implementation.

  
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**Day 5: 4<sup>th</sup> December 2018 (Tuesday)**

Mr Anup J Kelkar, Industry Expert, Nagpur, carried Hands on using scipy. In the afternoon session, he continued hands-on using matplotlib and Case Studies using Python.

**Day 6: 5<sup>th</sup> December 2018 (Wednesday)**

On final day of our FDP, Mr Anup J Kelkar, Industry Expert, Nagpur continued his talk on Data Analytics using Pandas. In afternoon session, Demos and hands-on using Machine Learning package: Bokeh/Seaborn and then exam was conducted followed by valedictory function.

**Submitted by:**

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Mr. T. Rajesh

Mr. Anil

  
HOD CSE