

Registration Format

One Week National Workshop on "Data Analytics Using R"

[DAUR 2018]

July 06 - 12, 2018

Name:

Designation:

Address:

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Mobile:

E-mail:

Participant Type:

Amount :

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Bank Name.....

Date:

Signature of the Participant

Technical Program Committee

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Silicon Institute of Technology

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Silicon

...beyond teaching

One Week National Workshop on Data Analytics Using R

[DAUR 2018]

July 06 - 12, 2018



Organized by

Departments of CSE, IT, and MCA
Silicon Institute of Technology

in Collaboration with

Orissa Information Technology Society (OITS)
CSI-Silicon Student Chapter, Bhubaneswar
ISTE-Silicon Students' Chapter, Bhubaneswar



Co-ordinator

Prof. Ajaya Kumar Tripathy

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Introduction

Data Analytics is the science of analyzing data to convert information to useful knowledge. This knowledge could help us understand our world better, and in many contexts enable us to make better decisions. While this is the broad and grand objective, the last 2 decades have seen steeply decreasing costs to gather, store, and process data, creating an even stronger motivation for the use of empirical approaches to problem solving. This workshop seeks to present a wide range of data analytic techniques and is structured around the broad contours of the different types of data analytics, namely, descriptive, inferential, predictive, and prescriptive analytics. This workshop is hosted by Silicon Institute of Technology (SIT), Bhubaneswar in collaboration with OITS, CSI-Silicon Student Chapter, Bhubaneswar and ISTE-Silicon Students' Chapter, Bhubaneswar.

Objectives

- This workshop aims at
 - i. bringing the students, professionals, academics, and research scholars together to share their knowledge for achieving focused development.
 - ii. **training the faculty members who are teaching/ planning to teach Data Analytics/ Machine Learning course.**
- After this workshop the participants will
 - i. have grounding on various Data Analytics techniques along with their theoretical foundation, algorithms, and practical examples to teach/ to do research and development in Data Analytics..
 - ii. learn to use R in Data Analytics problems.
 - iii. understand broad opportunities for automation with Data Analytics and apply it in practice. and
 - iv. formulate problems as Data Analytics tasks and solve them.

Resource Persons

- **Prof. Debasis Samanta, IIT Kharagpur**
- **Prof. Sudarsan Padhy, SIT Bhubaneswar, (Ex- Director, IMA, Bhubaneswar)**
- **Prof. Saroj Kanta Misra , Dean Administration & Students Affairs, SIT, BBSR**
- **Prof. Bijan Bihari Misra, Dean Research, SIT Bhubaneswar**
- **Prof. Rudra Mohan Tripathy, Xavier University Bhubaneswar**
- **Prof. Pradipta Kumar Pattanayak, SIT, Bhubaneswar**

Confirmations from some more resource persons from IITs are awaited.

About Silicon

Established in the year 2000, Silicon Institute of Technology is one of the premier Engineering Colleges of eastern India pioneering in the field of technical education. The campus is situated at the footsteps of Silicon Hills in Patia in a lush green tranquil environment. Silicon facilitates a teaching and learning process where education is revered and rewarded.

About OITS

OITS is a non-profit society formed in 1998 by a group of technocrats at India and abroad to promote information technology in the state of Odisha. OITS organizes different workshops, seminars, and conferences in collaboration with different technical Institutions. It organizes the International conference on Information Technology (ICIT) annually.

Who Should Participate

Faculty members, Researchers, and Students from Technical Institutions/Engineering colleges Professionals from industries, and researchers whose work involves data analysis and prediction from data from various domains such as image and video analysis, finance, natural language processing, medical diagnostics, and social networks.

Registration Fees

- **Rs.3000.00** (Three Thousand only) for Industry participants, **Rs.2500.00** for Faculty members and PhD Scholars. OITS will provide a subsidy of **Rs. 500.00** on the registration fee a maximum of ten OITS life members those are not supported by their institutions. To avail the subsidy they may send a request by email to the Prof. S. P. Misra, President OITS (spmisra1@yahoo.com), with a copy to Prof. S. Padhy (spadhy07@gmail.com).
- **Rs.1500.00** (One Thousand Five Hundred only) for Students pursuing M.Tech / M.Sc. / MCA / B.Tech / Student members of CSI / ISTE

Registration: The participant should send the filled in application form and the DD or confirmation slip of the payment to the Coordinator by 30th June 2018. Payment of the fees can be made by:

1. By Net Banking (Name of Bank – Union Bank of India, Infocity Branch, Chandaka Industrial Estate, Bhubaneswar, 751024, A/c No.- 380802011000162, A/c name - Silicon Institute of Technology, Branch code: 559512, IFSC Code: UBIN0559512. Email the transfer details (Name of the Participant, Name of workshop, Amount, UTR No., Date of Transfer etc.) to: accounts.sit@gmail.com with a copy to Prof. Ajaya

Kumar Tripathy (ajayatripathy1@silicon.ac.in). Do not make any cash deposit in the above account, **OR**

2. By Demand Draft in favor of “Silicon Institute of Technology” payable at Bhubaneswar.

Spot registration on cash payment will be accepted July 6th 2018 subject to availability of seats. Payment by cheque will NOT be accepted.

The registration fee includes workshop kit, lunch, tea and snacks. Accommodation is not included.

Venue

Silicon Institute of Technology, Silicon Hills, Patia, Bhubaneswar 751024.

Accommodation

Shared AC / Non-AC accommodation can be provided in the Silicon Guest House on payment basis to a limited number of participants based on availability. Requests for accommodation must reach the coordinator on or before 30th June 2018.

Course Outline

A. Lectures & Discussions (31 hours)

- Introduction to Data Analytics (with examples of classification, regression and clustering problems)
- Mathematical foundations (Eigenvectors, Eigenvalues, Matrix Calculus, Convex optimization, Statistical Inference, Bayesian Inference, tests of significance)
- Statistical foundation (Multiple linear regression, ridge regression, Logistic regression)
- Feature subset selection, LASSO, Feature Extraction, PCA
- Model Assessment and selection (regularization, model complexity, Bias variance trade off, , training error, test error, over fitting, RMSE, Cross Validation, confusion matrix, ROC curve)
- Model of a Neuron, Perceptron, back propagation algorithm (BPA), heuristic to improve BPA, **Deep learning**
- Support Vector Machine (SVM) for classification and regression
- Classification and Regression Trees, Random Forest
- Cluster Analysis

B. Hands-on Sessions using R (14 hours)

- Each day, about 2 hours (or more) will be dedicated for R implementation of some of the techniques covered in the workshop.