



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
MUNSHI NAGAR, ANDHERI (WEST), MUMBAI - 400 058
(Autonomous Institute Affiliated to University of Mumbai)



**AICTE Sponsored Two Week FDP on
“Insights into Intelligent Automation, Machine Learning and Data Science:
Foundation of Data Science”
(19th Oct to 31st Oct 2020)**

Schedule

Date	Morning Session (10.00 am to 1.15 pm)	Evening Session (5.00pm to 7.00pm)
19/10/2020	Keynote Speech: Data Sovereignty (9.30 to 10.30 am) <i>Mr. Vinit Goenka</i> (Member of Governing Council, CRIS, Ministry of Railways, Gov. of India)	Demo/Hands-on: Maths for NN- activation functions <i>Dr. D. R. Kalbande (Dean Industry Relations, S.P.I.T.)</i>
	Foundation of mathematics for data science: Maths for NN- activation functions (10.30 am to 1.15pm) <i>Dr. D. R. Kalbande (Dean Industry Relations, S.P.I.T.)</i>	
20/10/2020	Math for ML, Linear Algebra and Matrix operations <i>Dr. S. K. Gupta (Associate Professor, IIT Roorkee)</i> <i>Dr. Sanjeev Kumar (Associate Professor, IIT Roorkee)</i>	Topic : Hands-on Python* <i>Mr. Rocky Jagtiani</i> (Head Training and Development Suven Consultants & Technology Pvt ltd.)
21/10/2020	Statistics for data science: Population and samples. Descriptive statistics: Categorical, numerical, visualization: histogram, cross-table, scatter plots, mean, median mode, skewness, variance, standard deviation, covariance. <i>Dr. Vishwesh Vyawahare (Professor, RAIT)</i>	Topic : Hands-on Python* <i>Mr. Rocky Jagtiani</i>
22/10/2020	Understanding Applications & Programming Numpy, Scipy, Pandas, and Matplotlib, Sklearn. Packages (Hands-on Python*) <i>Mr. Rocky Jagtiani</i>	Topic : Hands-on Python* <i>Mr. Rocky Jagtiani</i>



23/10/2020	<p>Tensors Inferential statistics: Standard error, hypothesis testing, Data visualization Probability refresher: Events, combinations, permutations and conditional probability. <i>Dr. Vishwesh Vyawahare (Professor, RAIT)</i></p>	
24/10/2020	<p>R Programming Fundamentals for data science</p> <ul style="list-style-type: none"> ● Working with data types and variables ● Vectors, matrices, lists, and data frames 	<p>R Programming Fundamentals for data science <i>Mr. Hoshang Karanjekar</i> <i>(Senior Software Engineer, SimpleCRM)</i></p>
26/10/2020	<ul style="list-style-type: none"> ● Data import ● Logical statements: loops, repeats, and functions ● Data plotting and visualization ● Introduction to basic statistical functions and packages <p><i>Mr. Hoshang Karanjekar</i> <i>(Senior Software Engineer, SimpleCRM)</i></p>	<p>Case Study on R-Programming <i>Dr. Seema Kolkur</i> <i>(Assistant Professor,</i> <i>Thadomal Shahani Engineering College)</i></p>
27/10/2020	<p>Scalable data science: Types of Data. Design goals for scalable data as Big Data and relevant scalable data platforms, and where in the systems landscape these platforms fall. Scaling data Science algorithms and analytics using Big Data platforms.</p>	
28/10/2020 29/10/2020	<p>Distributed programming models for scalable Data, including Map Reduce, Stream processing and Graph processing. Design of and development on Big Data platforms and their optimizations on commodity clusters and Clouds. <i>Dr. Preeti Jani (Professor, S.P.I.T.)</i> Introduction to SCALA (11:30 am to 1:15 pm) <i>Prof Pramod Bide (Assistant Professor, S.P.I.T.)</i> Bonus Topic: Data Processing in Hadoop (3:00 to 5:00 pm) <i>Prof Aparna Halbe (Assistant Professor, S.P.I.T.)</i> Bonus Topic: Map reduce using SCALA (3:00 to 5:00 pm) <i>Prof Pramod Bide (Assistant Professor, S.P.I.T.)</i></p>	<p>PySpark in Google Colab <i>Prof. Abhijeet Salunke (Assistant Professor, S.P.I.T.)</i></p> <p>Coding dimensionality reduction in Python using PCA,SVD, LDA techniques <i>Mr. Parvez Shaikh</i> <i>(Director - Database Development</i> <i>Media.Net Software Services)</i> Bonus topic : Handling Imbalanced Data</p>



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30/10/2020	Developing Projects to automate our daily task using Python <i>(Like web scrapping, creating a new PDF book from loads of artifacts, extracting emails & mobile numbers from 1000's of comments on social media & more)</i> Mr. Rocky Jagtiani	
31/10/2020	Exam and Feedback PEC	Valedictory Session PEC
To be covered during above lab sessions (20,21,22 Oct)	<i>*Hands on using Python for all above topics</i> <ul style="list-style-type: none">• <i>Basic Syntax: Variables and Data Types</i>• <i>Functions</i>• <i>File Input and Output</i>• <i>Numpy, Scipy, Pandas, and Matplotlib, Sklearn. Packages</i>• <i>Fundamental principles and methods of visualization</i>	