



FORE School of Management  
New Delhi



**Online Program On**  
**Big Data and Data Analytics**  
**for**  
**Business and Management**

**A JOINT Certificate Program of**  
**FORE School of Management**  
**&**  
**University of California, Riverside**  
**(Batch VI - Feb'2021 to Sept'2021)**

It is with some pride that we open this Joint Certificate Program in Big Data related technologies for VI Batch of students. Our pride flows from the fact that many of our students are now either in Data Science related avocations or are using data science knowledge in their existing engagements.

Welcome to this Joint Certificate Program of University of California with FORE School of Management. It is a 180-hour program where we cover all major aspects of Big Data Technology. The Course curriculum includes:

- A. Machine Learning Algorithms
- B. Hadoop, Spark and Kafka eco-systems. Streaming Analytics
- C. NoSQL and Graph Databases
- D. Deep Learning: AI and NLP
- E. Web Analytics
- F. Business Analytics Capstone

Brief overview of first four of these subjects are on page no. forth and fifth page of this brochure. For more detailed course structure please [see this link](#).

**For complete course details, please [see this link](#)**



# Why is this program unique?

- Completely Project/Lab oriented program
- Students execute multiple real world projects on Kaggle and compete in Hackathons. Some of the projects have earned high up-votes from Kaggle Masters.
- Extensive range of technologies covered – Not covered in any other program. Have a look at Quick Course Overview page
- Syllabus gets updated after every Batch of students to deliver most current techniques & technologies
- We teach with one sole aim – Of bringing a change to your Career – EITHER by way of adding more value to your existing avocation OR progressing to a more rewarding career
- Hold Workshops besides regular classes; Workshops are led by Students and their ideas – A very unique program feature



For complete course details, please [see this link](#)



# QUICK COURSE OVERVIEW

## MACHINE LEARNING AND STREAMING ANALYTICS

### Machine Learning using Python

1. Python: Data structures in Python, Pandas and Numpy.
2. Data exploration using pandas & numpy.
3. Data Visualization
4. Cluster Analysis
5. Classification Analysis: Decision tree Induction
6. Neural Network
7. Random Forest and Regression Trees
8. Dimensionality Reduction
9. Evaluating Classification performance Bias-variance trade-off; L1 & L2 regularization
10. Gradient Boosting Technique for Machine Learning
11. Light GBM: Light Gradient Boosting Machine
12. eXtreme Gradient Boosting (XGBoost)
13. Catboost Modeling Techniques
14. Hyper-parameter optimization using various techniques including Bayes Optimization
15. Feature Engineering; Feature Selection and Feature importance
16. Interpreting Machine Learning Models using Partial Dependence Plots and LIME
17. Out-of-core Machine Learning with Gigabytes of data

### Streaming Analytics

1. Introduction to Hadoop and its ecosystem; Hadoop file storage formats
2. Linux and Hadoop shell commands
3. Hadoop streaming
4. Hive on Tez and hadoop
5. Pig on Tez and hadoop
6. Spark: Machine Learning; Structured Streaming; Deep Learning; Building data pipelines with Hadoop, kafka and NoSQL databases; Learning Koalas; Spark Delta Lake
7. Apache Kafka: Building complex Data pipelines; transforming streaming data.



For complete course details, please [see this link](#)

# QUICK COURSE OVERVIEW

## DEEP LEARNING AND NOSQL DATABASES

### Deep Learning and AI

1. Auto encoders and anomaly detection
2. Deep Learning with Convolution Neural Network
3. Using very Deep Convolution networks and Data Augmentation
4. Transfer Learning with ResNet50 and InceptionV3
5. Generative-Adversarial Networks (GAN)
6. Recurrent Neural Networks
7. Natural Language Processing
8. Applying deep learning techniques to structured (tabular) datasets
9. Experimenting with Tensor Board on Google Colaboratory



### NoSQL and Graph Databases

1. Introduction to NoSQL Databases and CAP theorem
2. MongoDB Document Database; Installation; Querying & Aggregation pipelines; Full text search; Replication; Sharding operations; Transactions; Data pipelines with Spark and Flume; Building Machine learning models using Spark with mongoDB as backend.
3. Hbase column family database on Hadoop; hbase-hive integration; Data-pipeline using flume
4. TIG Stack: telegraf, Influx DB & Grafana for Time Series and IOT Data
5. Gephi Open Graph Visualization Platform
6. Neo4j Graph Database



For complete course details, please [see this link](#)

# WHO SHOULD ATTEND?

## **Executives/Managers**

Ambitious executives, product managers, technical experts, team sharpening their skills and to make sense of data in order to innovate, be more creative and more value to their organisation and to the society.

## **Academicians**

Lecturers and Professors for extending the horizon of their knowledge and deepening their research skills.

## **Data Scientists/Developers**

Techniques taught to them will have applications in a broad array of disciplines and Industries.

## **Students/Research Scholars**

2nd year students currently enrolled in Engineering / PGDM/ MBA or any graduate or post-graduate program who have had an introductory course in statistics. These students can look forward to better placement opportunities with added skillset.



For complete course details, please [see this link](#)



# PROGRAM FACULTY



**PROF. ASHOK HARNAL**  
**PROGRAM COORDINATOR**

Prof. Ashok Kumar Harnal: Graduated from IIT Delhi in Electronics and Communication; Expert in Big Data, Data Analytics and Deep Learning, both on the technology side as also on Analytics side. Extensively taught faculty and students on the subject of big data technology and analytics. Participated in various machine learning projects with real world data in areas of business, environment, marketing and advertisement. Conceived, planned & implemented in Defence Estates three country-wide information systems:

- a) Raksha Bhoomi to computerize land records;
- b) Knowledge Management of land-title related files/maps in all Defence Estates offices; and
- c) Setting up of a Disaster Management organization, Archival Unit and

Resource Center, at Delhi and at Pune for safe storage of land-title related records in paper, digital & microfilm forms. Authored two books: one on Programming Games on Computers and the other on Linux Applications and Administration; both books have been published by Tata McGraw-Hill.



**PROF. KAMAL OFELUS**  
**PROFESSOR at UCR**

Entrepreneurial and versatile machine learning expert. Expertise not only in expert system identification, development, implementation, verification but also mitigating business risk associated with these new systems. Especially skilled at building effective and productive working relationships with customers, team members, executive management. Excellent time management, negotiation, interpersonal and presentation skills. A talent for analyzing problems, developing simplified procedures, and finding innovative solutions that improve operating efficiency and lower costs. Especially interested in bringing methods long used in engineering and scientific communities to making financial and business decisions.



**DR. JITENDRA K. DAS**

He has been a Professor of Marketing and the founder Dean (Noida Campus) of the IIM Lucknow. With a B.Tech. and M.Tech. both from the IIT Delhi, and a Doctorate from the University of Toronto, he has to his credit many national and international publications. He has been a consultant to the World Bank, IDRC (Canada), GWB (for GTZ Germany), Coal India Ltd., Globe Caste India (a division of France Telecom), various Ministries of the Government of India, etc., and Member of a few policy committees of the Government of India. In academics he has been associated with teaching at IIM Ahmedabad, Kozhikode and Lucknow, and at Danube Business School, Danube University Krems, Austria.



**PROF. RAKHI TRIPATHI**  
**PhD**  
**IIT Delhi**



**PROF. LALIT JIWANI**  
**PhD**  
**IIT Delhi**



**PROF. SUNITA DANIEL**  
**PhD**  
**IIT Kanpur**

For complete course details, please [see this link](#)

# STUDENTS TESTIMONIALS

**Abhinav Kislay**  
**Solution Designer at Tech Mahindra**  
**Experience Rating: 9/10**

It's been a wonderful journey of 10 months of learning. Spend 10 months of early morning (from the Netherlands) on the weekend and always felt excited about the next class. Kudos to Professor Ashok for making classes so interactive. The course content supported documents (Moodle) and exercise was well planned. I will certainly recommend this course to anyone who would like to step into the Data Science/ Engineering field. However to learn these, certainly need 10 months of full dedication. Thank you FORE for providing this opportunity to learn this.

**NAGESH KUMAR ANUMALA**  
**Dy. General Manager at NABARD**  
**Experience Rating: 10/10**

The program is very useful as I came to know the details regarding data analysis, python, machine learning, and deep learning tools. I have implemented some of the learning to my day to day work and it improves my productivity. Highly recommend for all aspiring team leaders.



**For an upcoming webinar, register yourself by sending your name and number at [exed@fsm.ac.in](mailto:exed@fsm.ac.in) write "BDA @ FORE" in the subject line.**



# FEE AND OTHER DETAILS

For complete course details, please [see this link](#)



## COURSE FEE

INR 65,500  
+ GST



## EARLY BIRD DISCOUNT

(Registration fee paid by  
8<sup>th</sup> Feb'2021)  
INR 5,000



## Corporate Discount

Group of  $\geq$  2 participants  
from the same  
organisation : 5500  
discount to each



## Full fee in Advance

INR 55,500 + GST



## 3 EASY EMI

Registration Fee - INR 10,500  
1st Installment - 32,500  
2nd Installment - 22,500  
(Excluding GST)



## Batch Commencement

Starting from Feb'2021



## CLASSTIME

Sat & Sun  
10:30 am to  
01:30 pm



## COURSE DURATION

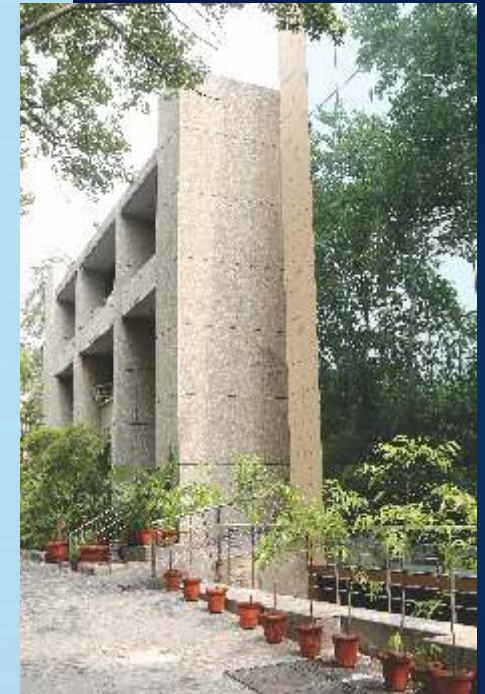
7 MONTHS



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# ABOUT FORE SCHOOL OF MANAGEMENT NEW DELHI

Foundation for Organisational Research and Education (FORE) is committed to the advancement of Management Education, Research, Training and Consultancy. Incorporated in 1981, as a non-profit institution, FORE has been working with industry and academia for developing new domains of managerial thought and education and contributing to building leaders in today's global business environment. Located in the heart of South Delhi, FORE provides contextual learning and helps in the development of students as thinking professionals, who have the ability to meet the future challenges of tomorrow's corporate leaders. The programmes develop multiple skills including managerial decision-making, problem-solving, analytical reasoning, communications, creativity and innovation. FORE takes pride in its professional and high-quality faculty, modern infrastructure, technology and resources-be it in the fields of General Management, Human Resource, Finance, Operations, Marketing, Information Technology, Economics and International Business.



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# CONTACT US

## FORE School of Management

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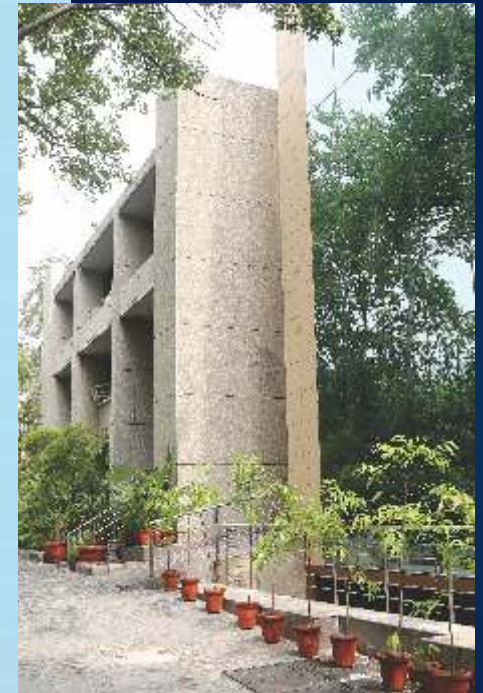
Website : [www.fsm.ac.in](http://www.fsm.ac.in)

Contact Person:- Mukesh Maheshwari: 011-41242471 / 9166085159

Puneet Garg: 011-41242498 / 9810875278

For registration and queries please contact as above.

\* Terms & Condition Apply. Any request for refund of registration fees on account of valid reason prior to the closure of registrations or 10 working days before the date of course commencement whichever is earlier, the amount paid shall be refunded with a deduction of ₹5,000 + applicable taxes.



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