



CERTIFICATE PROGRAM

Big Data with Spark and Scala

Online Self Paced Course | 30+ Hours of Training

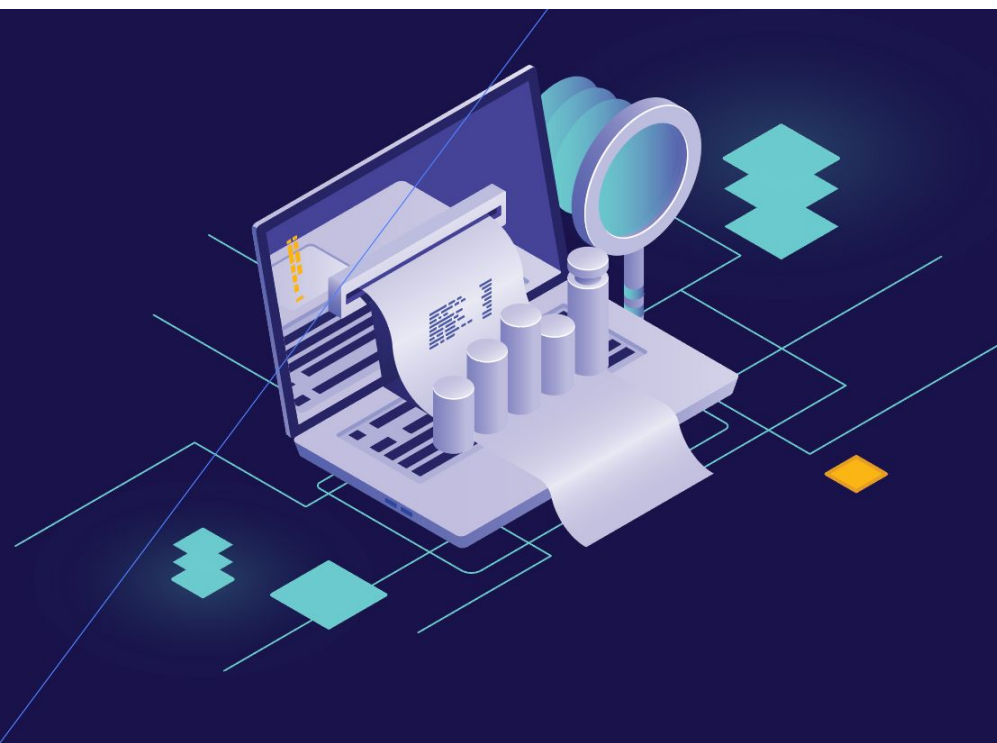


CloudxLab & Course

At Cloudxlab, we are building one of the best gamified learning environments to make technology learning fun and for life. More than 50,000 users across the world have been benefited by our signature courses on Machine Learning and Big Data. Our vision is to upskill people on high-end technologies like Deep Learning, Machine Learning, Big Data and make them employable.

As humans, we are immersed in data in our everyday lives. As per IBM, the data doubles every two years on this planet. The value that data holds can only be understood when we can start to identify patterns and trends in the data. Normal computing principles do not work when data becomes huge.

There is massive growth in the big data space, and job opportunities are skyrocketing, making this the perfect time to launch your career in this space. In this course, you will learn Spark to drive better business decisions and solve real-world problems.



Sandeep Giri

Founder at CloudxLab

About E&ICT Academy, IIT Roorkee

E&ICT Academy, IIT Roorkee provides training programs with an emphasis on hands-on learning in basic/advanced topics and emerging technologies. Then project is sponsored by the Ministry of Electronics and Information Technology, Govt. of India. E&ICT courses are at par with QIP for recognition/credits.

The programs are conducted by well-known industry partners, researches and experts from leading academic and renowned R&D organizations. For this, the Academy has signed MoUs with Industry/ R&D partners in different domains, who collaborate and work with them in conducting the training programs. Academy also facilitates the interaction between beneficiaries and industry experts to enable collaboration and finding opportunities for parent institutions.



Sanjeev Manhas

Associate Professor IIT Roorkee

Why CloudxLab



Earn a certificate from E&ICT Academy, IIT Roorkee.



Learn Big Data with Spark from industry experts and become expert in Data Science domain



Online cloud lab for hands-on for real-world experience



Best-in-class support Throughout your learning journey



Lifetime course access



Work on real-world projects.



Interact with the international community of peers via the discussion forum.

Course Creators



Sandeep Giri

Founder at CloudxLab
Past: Amazon, InMobi, D.E.Shaw

Course Developer

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Sanjeev Manhas

Associate Professor,
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Course Advisor

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R. Balasubramanian

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Partha Pratim Roy

Assistant Professor,
IIT Roorkee

Course Developer

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Abhinav Singh

Co-Founder at CloudxLab
Past: Byjus

Course Developer

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Course Curriculum

1. Introduction

- Apache Spark ecosystem walkthrough
- Spark Introduction - Why Spark?
- Quiz

2. Scala Basics

- Scala - Quick Introduction - Access Scala on CloudxLab
- Scala - Quick Introduction - Variables and Methods
- Getting Started: Interactive, Compilation, SBT
- Types, Variables & Values
- Functions
- Collections
- Classes
- Parameters
- More Features
- Quiz and Assessment

3. Spark Basics

- Apache Spark ecosystem walkthrough
- Spark Introduction - Why Spark?
- Using the Spark Shell on CloudxLab
- Example 1 - Performing Word Count
- Understanding Spark Cluster Modes on YARN
- RDDs (Resilient Distributed Datasets)
- General RDD Operations: Transformations & Actions
- RDD lineage
- RDD Persistence Overview
- Distributed Persistence.

Course Curriculum

4. Writing and Deploying Spark Applications

- Creating the SparkContext
- Building a Spark Application (Scala, Java, Python)
- The Spark Application Web UI
- Configuring Spark Properties
- Running Spark on Cluster
- RDD Partitions
- Executing Parallel Operations
- Stages and Tasks

5. Common Patterns in Spark Data Processing

- Common Spark Use Cases
- Example 1 - Data Cleaning (Movielens)
- Example 2 - Understanding Spark Streaming
- Understanding Kafka
- Example 3 - Spark Streaming from Kafka
- Iterative Algorithms in Spark
- Project: Real-time analytics of orders in an e-commerce company

Course Curriculum

6. Data Formats and Management

- InputFormat and InputSplit
- JSON
- XML
- AVRO
- How to store many small files - SequenceFile?
- Parquet
- Protocol Buffers
- Comparing Compressions
- Understanding Row Oriented and Column Oriented Formats - RCFile?

7. DataFrames and Spark SQL

- Spark SQL - Introduction
- Spark SQL - Dataframe Introduction
- Transforming and Querying DataFrames
- Saving DataFrames
- DataFrames and RDDs
- Comparing Spark SQL, Impala, and Hive-on-Spark

8. Machine Learning with Spark

- Machine Learning Introduction
- Applications Of Machine Learning
- MLlib Example: k-means
- SparkR Example

Projects

1. Spark MLlib

Generate movie recommendations using Spark MLlib

2. Spark GraphX

Derive the importance of various handles at Twitter using Spark GraphX

3. Churn the logs

Churn the logs of NASA Kennedy Space Center WWW server using Spark to find out useful business and devops metrics

4. Spark application

Write end-to-end Spark application starting from writing code on your local machine to deploying to the cluster

5. Analytics Dashboard

Real-time analytics dashboard for an e-commerce company using Apache Spark, Kafka, Spark Streaming, Node.js, Socket.IO and Highcharts

Course Details and Fees —

Please find more information about the course and fees here:

<https://cloudxlab.com/course/70/big-data-engineering-with-spark-eict-iitr>

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