



ADVANCE CERTIFICATE PROGRAM

Data Science & Artificial intelligence

11 Months of Blended Learning | Certificate by E&ICT Academy, IIT Roorkee



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.

Every domain of computing such as data analysis, software engineering, and artificial intelligence is going to be impacted by Data Science & AI. Therefore, every engineer, researcher, manager or scientist would be expected to know Data Science.

So naturally, you are excited about Data Science & AI and would love to dive into it. This specialization is designed for those who want to gain hands-on experience in solving real-life problems using big data, machine learning and deep learning. After finishing this specialization, you will find creative ways to apply your learning to your work like building a robot which can recognize faces or change the path after discovering obstacles on the path.



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 Data Science 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.

Mentors / Faculties



Raksha Sharma

Assistant Professor,
IIT Roorkee

Course Developer

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Gaurav Dixit

Assistant Professor,
IIT Roorkee

Course Developer

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Sanjeev Manhas

Professor,
IIT Roorkee

Course Advisor

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Sandeep Giri

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

Course Developer

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Abhinav Singh

Co-Founder at CloudxLab
Past: Byjus

Course Developer

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Praveen Pavithran

Co-Founder at Yatis
Past: YourCabs, Cypress Semiconductor

Course Advisor

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Course Curriculum

Foundations

- Linux for Data Science
- Getting Started with Git
- Python foundations
- Machine Learning Prerequisites(Including Numpy, Pandas and Linear Algebra)
- Getting Started with SQL
- Statistics Foundations
- Project

Course Curriculum

Machine Learning & Deep Learning

- Data Preprocessing, Regression - Build end-to-end Machine Learning Project
- Classification
- ML Algorithms - Linear Regression Gradient Descent, Mini batch, Stochastic, Regularization, PCA, Decision Tree, Random Forest, Ensemble, SVM
- Introduction to Artificial Neural Networks with Keras
- Training Deep Neural Networks
- Custom Models and Training with TensorFlow
- Loading and Preprocessing Data with TensorFlow
- Deep Computer Vision using Convolutional Neural Network
- Applied Computer Vision
- Processing Sequences Using RNNs and CNNs
- Natural Language Processing Concepts and RNNs
- Representation Learning & Generative Learning Using autoencoders and GANs
- Reinforcement Learning
- Capstone Project - 1 Month

Course Curriculum

Big Data With Hadoop & Spark

- Apache ZooKeeper
- HDFS - Hadoop
- YARN
- MapReduce
- Tutorial Session and how to proceed with rest of the course
- Pig & Pig Latin
- Getting Started with Hive
- Tutorial Session and how to proceed with rest of the course
- Sqoop, Flume and Oozie
- NoSQL and HBase
- Tutorial Session and how to proceed with rest of the course
- Scala foundations
- Getting Started with Spark
- Basics of RDD and Key-Value RDD
- Tutorial Session and how to proceed with rest of the course
- Advanced Spark Programming
- Spark Streaming(Including Kafka)
- Tutorial Session and how to proceed with rest of the course
- SparkSQL, Dataframes and SparkR
- Machine Learning and Graph Processing with Spark
- Tutorial Session and how to proceed with rest of the course

Projects

- Churn Email Inbox with Python
- Solve various problems using MapReduce and Python
- Sentiment Analysis using Hive
- Writing Spark Applications
- Parse Apache Access Logs using Spark
- Predicting the median housing prices in California
- Classifying handwritten digits in MNIST dataset
- Noise removal from images
- Building Spam Classifier
- Predicting Titanic Passenger Survival using Machine Learning and Python
- Image Classification with Pre-trained InceptionV3 Network
- Host an Image Classification App on Heroku
- Predicting Noisy Images using KNN Classifier
- Building a CNN Classifier using TensorFlow 2 for MNIST Fashion Dataset
- Deploy an Image Classification Model using Flask
- Build a Sentiment Classifier using Python and IMDB Reviews
- Mask R-CNN with OpenCV for Object Detection
- Image Classification with Pre-trained Keras models
- Build a Neural Network for Image Classification with TensorFlow
- Neural Style Transfer using Deep Learning & TensorFlow 2 (Art Generation Project)
- Credit Card Fraud Detection using Machine Learning
- Image Stitching using OpenCV and Python (Creating Panorama Project)
- Stock Closing Price Prediction using Deep Learning, TensorFlow2 & Keras
- Introduction to Transfer Learning (Cat vs Non-cats Project)
- Building Cat vs Non-Cat Image Classifier using NumPy
- Iris Flowers Classification using Deep Learning & Keras
- Classify Clothes from Fashion MNIST Dataset
- Face recognition - Identify person from digital image or video
- Reinforcement learning using Open Gym

Course Details and Fees —

Please find more information about the course and fees here:

<https://cloudxlab.com/course/108/advanced-certification-in-data-science-ai-from-eict-iit-roorkee>

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