



**E&ICT Academy, IIT Roorkee**

# **Applied Data Science and Machine Learning With Python**

**Certification Program By E&ICT Academy, IIT Roorkee**



# Why Become a Data Scientist and Machine Learning Engineer

In today's evolving business environment, **data has been crowned the universal currency**. Competitive advantage is now also synonymous with how organizations can gather, analyze and assimilate learnings from data. Thousands of companies need team members who can transform data sets into strategic forecasts. Acquire in-demand data science and Python skills and meet that need.

Demand for data analysts has shot through the roof over the last 5 years. And, thanks largely to data coming in from the Internet of Things and advances in cloud computing, global data storage is set to grow from 45 zettabytes to 175 zettabytes by 2025. Data science salary is quite lucrative and that is why many young IT aspirants are choosing data science as their career option.



# About IIT Roorkee



Indian Institute of Technology - Roorkee is among the foremost institutes of national importance in higher technological education and in engineering, basic and applied research. The Institute ranks amongst the best technological institutions in the world and has contributed to all sectors of technological development. It has also been considered a trend-setter in the area of education and research in the field of science, technology, and engineering.

## About E&ICT Academy

Electronics & ICT Academy IIT Roorkee (E&ICT IITR) is an initiative supported by MeitY, Govt of India. EICT IIT Roorkee delivers FDPs and certification courses in online as well as offline mode. Our courses lay emphasis on bridging the gap between industry demand and academic approach to learning and provide a foundation to build your career in the industries related to the ICT sector. All our courses have projects with real-life problems to give industry insights into learning. We have assimilated academic as well as industry experts to formulate the most effective courses that help professionals, students and faculty to upgrade their skills without disrupting their regular schedule.

## Achievements



In Engineering  
Category of NIRF  
Rankings 2020



In Overall Category of  
NIRF Rankings 2020



Among the IITs in the  
'Citations per Faculty'  
parameter in QS World  
University Rankings, 2021



Best university in India  
by the Times Higher  
Education (THE) World  
University Rankings 2019



# Who should attend this Program?



**Students**



**Professional**



**PassOut**

Designed for Students/ Working Professionals, Fresh Graduates, Self-starters, Career transformers with essential work experience.



# Program Features

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**Live Instructor-Led Sessions**



**Code Reviews by Experts**



**Hands-on Live Projects**



**One-on-One with Industry Mentors**



**Hands-on Learning**



**Personalized Feedback on Assignments**



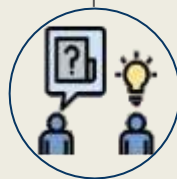
**Fundamentals to Advanced**



**Value added soft skills sessions**



**Assignments and Multiple-Choice Questions**



**Ask Expert Anything Sessions**

# Program Highlights

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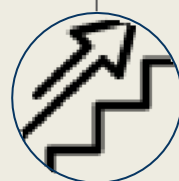
**Certificate of Completion from EICT Academy IITR**



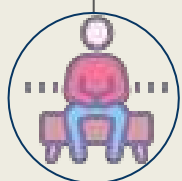
**Hands-on Sessions by Industry Experts**



**Internship Certification from Industry Partner**



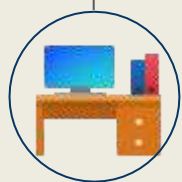
**Career Guidance Sessions by Industry Expert**



**Placement Assistance by Delivery Partners**



**Doubt Clearing Session by Mentors**



**Internship Opportunity with Industry Partners**



**Resume Preparation by Industry Expert**



**Lectures from IIT Roorkee Faculties**

# Faculties and Course Advisors

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**Prof. Sanjeev Manhas**  
E&ICT Academy, IIT Roorkee

**Principal Investigator**  
[Know More](#)



**Partha Pratim Roy**  
CSE Department, IIT Roorkee

**Expert from Academia**  
[Know More](#)



**Prof. Debi Prosad Dogra**  
Electrical Dept., IIT Bhubaneswar

**Expert from Academia**  
[Know More](#)



**Kaushlendra Singh Sisodia**  
Director at Uniconverge Technologies, IIT  
Kanpur Alumni

**Program Advisor**  
[Know More](#)



**Mr. Sanjay Aggarwal**  
Uniconverge Technologies Pvt. Ltd.

**Expert from Industry**  
[Know More](#)

# Post Training Assistance

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- Career Guidance Opportunities
- Long Term Internship Opportunity
- Long Term Mentorship
- Projects Support



**Career Guidance Opportunities**



**Long Term Internship Opportunity**



**Long Term Mentorship**



**Projects Support**



# Course Curriculum

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## Introduction to Python Programming

- ☐ Python Installation
- ☐ String Operations
- ☐ Data Structures in Python
- ☐ Control & Loop Statements in Python
- ☐ Functions & Classes in Python
- ☐ Regular Expression
- ☐ Object Oriented Programming

## Data Science and Machine Learning

- ☐ Data Science Introduction
- ☐ Machine Learning Introduction
- ☐ Python Essentials
- ☐ R Language Essentials
- ☐ Maths For Data Science
- ☐ Statistics For Data Science
- ☐ Data Preparation With Pandas
- ☐ Visualization With Python
- ☐ Application of Machine Learning
- ☐ Machine Learning Associate

# Course Curriculum

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- ☐ **Advanced Machine Learning**
  - ☐ **Deep Learning – CNN Basics**
  - ☐ **Artificial Neural Network (ANN)**
  - ☐ **Sql For Data Science**
  - ☐ **Tableau Associate**
  - ☐ **M1 Model Deploy- Flask API**
  - ☐ **Data Science Project Execution**
  - ☐ **Machine Learning Project Execution**
  - ☐ **Big Data Foundation**
  - ☐ **Hadoop Concepts**
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- ☐ **Text Mining (Web Extraction/Sentiment & Symantic Analysis)**
  - ☐ **Forecasting (Data Driven & Model Based Approach)**
  - ☐ **Incubation and Entrepreneurship Opportunities**
  - ☐ **Q&A Session**
  - ☐ **Project Discussion Session**
  - ☐ **Career Guidance Session**
  - ☐ **Effective Resume Building**



# Job opportunities in DS and ML

Data Scientists are needed for businesses in every Industry. Even fortune companies as Google, Amazon, Apple, Facebook, Microsoft need data science experts who have in-depth knowledge of data extraction, data mining, visualization, etc. Some of the leading data science careers are,



**Business Intelligence Developer**



**Applications Architect**



**Industry Architect**



**Enterprise Architect**



**Data Scientist**



**Machine Learning Engineer**



**Data Analyst**



**Data Engineer**

# Top Companies Hiring in India

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accenture

Linkedin

amazon

Flipkart

fractal  
INTELLIGENCE FOR IMAGINATION

manthan

ad  
ABSOLUTDATA

uσ  
Mu Sigma

IBM

ugam  
POWERING ANALYTICS  
INTO ACTION

latentview  
Actionable Insights Accurate Decisions

EY

Deloitte.

KPMG

genpact

CITRIX®





# Test & Evaluation

The assessment for the theory & practical part is based on a knowledge bank of questions created by field experts and approved by E&ICT Academy.

To pass the qualification, every trainee should score a minimum of 50% cumulatively (Theory and Practical).

Assessment Comprises the Following Components:

- ☐ **Attendance and Punctuality Report**
- ☐ **Weekly Assignments (Theory - Hands-On )**
- ☐ **Weekly Tests (Basic-Advanced)**
- ☐ **Project**
  - Synopsis Process Report
  - Complete Project Report

# Program Offerings

## Class Content

- Content Co-created with Industry
- Real-world project
- Project reviews
- Project feedback from Expert

## Student Services

- Technical mentor support
- Student community

## Career Services

- Personal Career Coaching
- Interview Preparations





# Tools and Technologies














## Skills Covered In Program



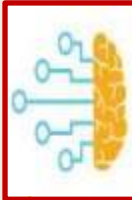
**Python Programming**



**Numpy, Pandas,  
Matplotlib**



**Data  
Preprocessing, Data  
Visualization**



**Machine Learning,  
Supervised and  
unsupervised learning**



**Data Mining- Text  
Mining, Decision Tree,  
Arm, KNN & Naïve  
Bayse, ANN & SVM**



**Statistics, Hypothesis  
Testing, Linear and  
Logistic Regression**



**Deep Learning – Cnn  
Basics**



**Tableau, Big Data,  
Hadoop Concepts**



**Natural Language  
Toolkit (NLTK)**



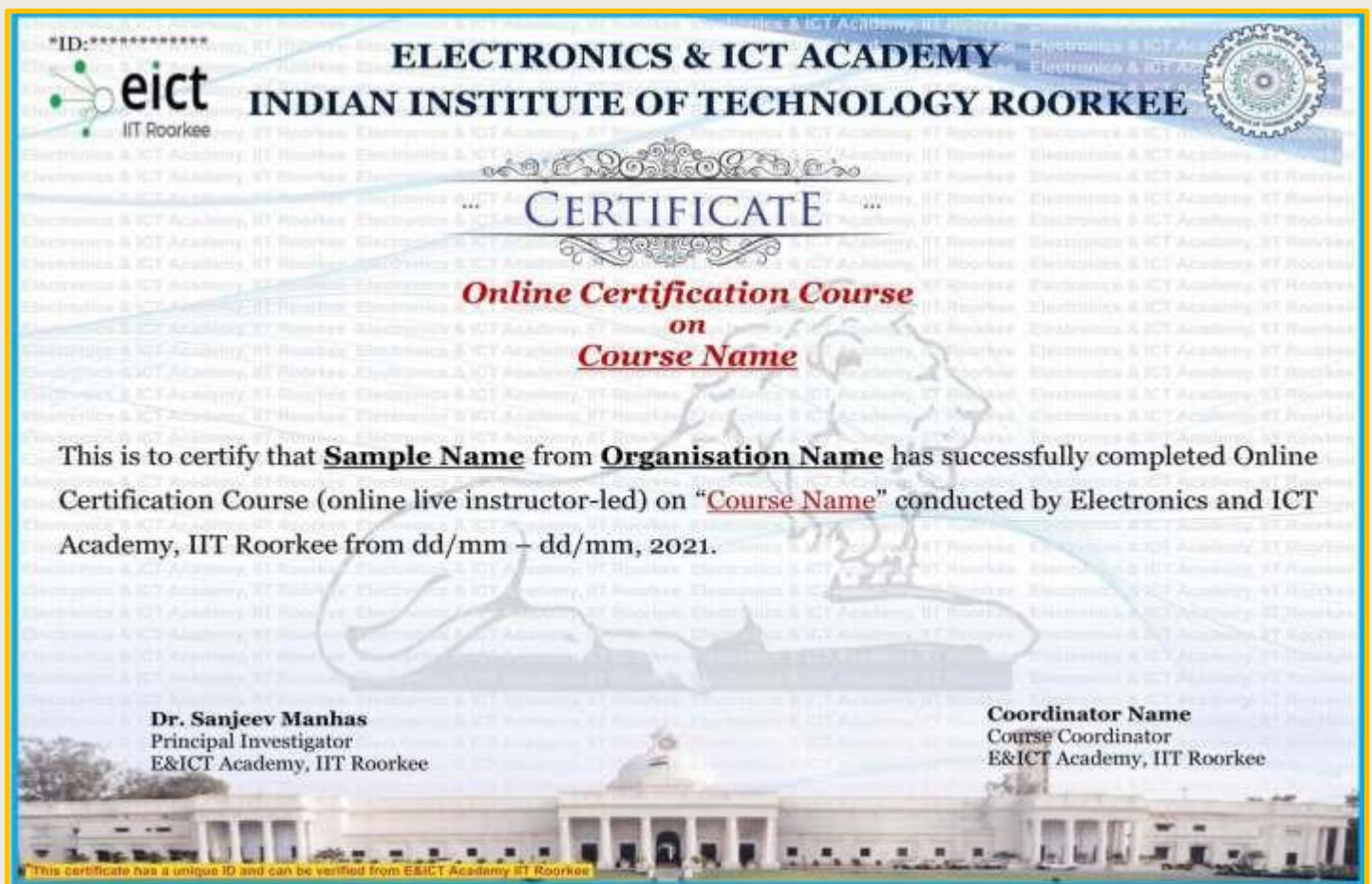
**Natural Language  
Processing (NLP)**

# Certification

Get eligible for 3 world-class certifications thus adding that the extra edge to your resume.

All successful participants will be provided with

- Certification of Completion from E & ICT Academy, IIT Roorkee
- A project completion certificate from Uniconverge Technologies
- Internship Certificate from Partner Companies



# Course Details and Fees

Please find more information about the program and fees here:

<https://eict.iitr.ac.in/certificate-course-in-ds-ml-using-python/>

<https://www.theiotacademy.co/applied-data-science-with-python-certification-program>

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## For Further Information Connect to

**E&ICT Academy, IIT Roorkee**

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## For Business Inquiries

For corporate training, in-house or on-campus training, bulkenrollments, connect to us at [programs.eictiitr@theiotacademy.co](mailto:programs.eictiitr@theiotacademy.co)

