CLOUD x LAB

Data Analysis With Python

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.

This "AI for Managers" course is designed exclusively for managers (project managers, CXO's, directors, VP's, product managers, senior managers, team leads, etc.) with our unique cloud lab access. The self-paced course equips the managers with the artificial intelligence (AI) and machine learning (ML) tools needed to manage any AI/ML projects/innovations.

The general perception is that we should know a lot of mathematics to learn AI. But after training for 1,000+ hours and solving many business problems using AI, we believe that anybody can learn AI and apply that knowledge at work or, even in our day-to-day life. Furthermore, this course doesn't require any programming knowledge. It will teach you the building blocks of AI using real-world practical examples and case studies.
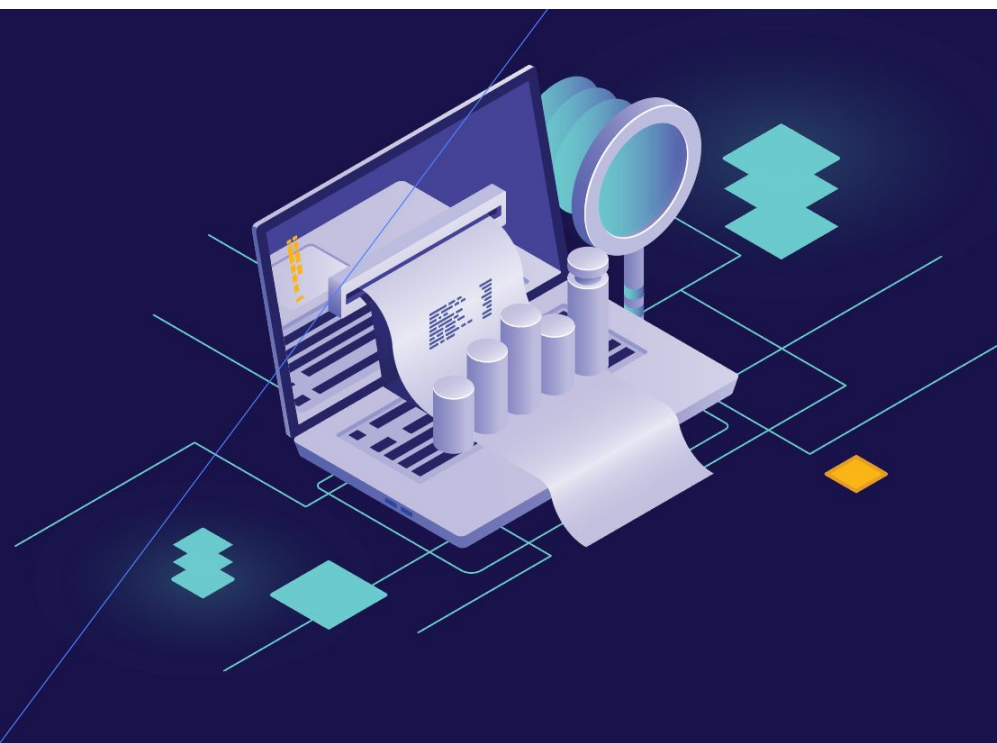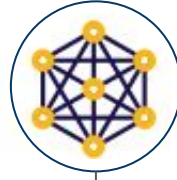
Sandeep Giri
Founder at CloudxLab

Why CloudxLab

Earn a Verified Certificate from CloudxLab

Case-study Based Learning

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

Best-in-class support Throughout your learning journey

Lifetime course access

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

Know More

Abhinav Singh

Co-Founder at CloudxLab

Past: Byjus

Course Developer

Know More

Jatin Shah

Ex-LinkedIn, Yahoo,

Yale CS Ph.D. IIT-B

Course Advisor

Know More

Praveen Pavithran

Co-Founder at Yatis

Past: YourCabs, Cypress Semiconductor

Course Advisor

Know More

Course Curriculum

1. **Linux tutorial**

   - Introduction to Linux Operating System and its key features
   - Basic Linux commands for navigation, file management, and system administration
   - Understanding the Linux file system hierarchy and permissions
   - Managing users, groups, and processes in Linux
   - Advanced topics: scripting, package management, and system automation in Linux.

2. **Git**

   - Introduction to Git and version control concepts
   - Setting up Git and creating a local repository
   - Tracking changes and committing to a repository
   - Collaborating on a Git repository with branching, merging, and pull requests
   - Managing remote repositories and working with remote collaborators
   - Troubleshooting and resolving Git conflicts
   - Advanced Git concepts such as rebasing, tags, and hooks
   - Integrating Git with other tools, such as GitHub and GitLab.

3. **Python Foundations**

   - Introduction to Python
   - Hands-on using Jupyter on CloudxLab
   - Variables, expressions, and statements
   - Conditional Execution and Functions

Course Curriculum

- Loops and Iterations
- Files and Lists
- Tuple and Dictionary
- Regular Expression
- Quizzes, gamified assessments & projects

4. Getting started with SQL

- Introduction to Structured Query Language (SQL) and relational databases
- Data modeling and normalization in SQL
- Creating and manipulating tables, including primary and foreign keys
- Querying data using SELECT statements, filtering and sorting results
- Grouping and aggregating data using functions such as SUM, AVG, and COUNT
- Joining tables and using subqueries
- Modifying data using INSERT, UPDATE, and DELETE statements
- Creating and managing database constraints and indexes
- Advanced topics in SQL, such as transactions, stored procedures, and views.

Course Curriculum

5. Numpy

- Introduction to Numpy for numerical computing
- Understanding and manipulating Numpy arrays
- Mathematical operations and broadcasting
- Statistics and data analysis using Numpy
- Various Numpy Functions

6. Pandas

- Introduction to Pandas library for data analysis
- Manipulating and transforming data using Pandas DataFrames
- Visualizing and exploring data using Pandas
- Data cleaning, manipulation, and transformation using Pandas
- Various Pandas Methods

7. MatplotLib

- Introduction to Matplotlib for data visualization
- Understanding and using different types of plots in Matplotlib
- Customizing plots with labels, titles, legends, and annotations
- Integrating Matplotlib with Pandas and Numpy for advanced data visualization.
- Various Matplotlib functions

Course Curriculum

8. Analytics and Data Sciences

We will learn about cleaning, wrangling, visualizing the data. This chapter will revolve around understanding of Analytics, Statistics and probability. We will also touch upon the important issue of statistical inference.

9. End-to-End Data Analysis Project

- Data analysis is a process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information, drawing conclusions, and supporting decision-making.
- The steps to perform Data Analysis depends on the end goal we want to pursue such as to drive business decisions, evaluate performance, for making predictions, etc.
- In this project, we will perform Data Analysis with the end goal of feeding the data to a Machine Learning model i.e for making predictions.

10. Introduction to Machine Learning (Optional)

- What is Machine Learning?
- Machine Learning Application
- Introduction to AI
- Different types of Machine Learning - Supervised, Unsupervised

Course Curriculum

11. Training Machine Learning Models (Optional**)**

- Training Machine Learning models
- Evaluating Machine Learning models
- Linear Regression
- Model Optimization using Gradient Descent
- Polynomial Regression
- Regularization
- Learning Curves
- Logistic Regression

Projects

1. Hands-On with Git

- In this Project, you will learn about creating git repository, commits, branches, and merge branches.
- Additionally, you will learn how to create and clone a GitHub repository and SSH keys to push the changes to the remote repository.

2. Churn Email inbox with Python

- In this project, you will use Python to access the data from files and process it to achieve certain tasks.
- You will explore the MBox email dataset, and use Python to count lines, headers, subject lines by emails and domains.
- Know your way on how to work with data in Python.

3. Data Visualization Hands-On with Matplotlib

- In this project, you will understand how to use Matplotlib, one of the most famous visualizing libraries in Python.

4. End-to-End Data Analysis

- In this project, you will perform Data Analysis with the end goal of feeding the data to a Machine Learning model i.e for making predictions.

Projects

5. Median House Value Prediction

- In this project, you would start by learning how to load a dataset (California Housing Dataset), visualize it, fill in the missing values, create pipelines, handle categorical variables, train models based on that data, and finally predict using that model.s to the remote repository.

6. Forecast Bike Rentals

- In this project, you will use Python and scikit-learn to build models using ML algorithms, and apply them to forecast the bike rentals.

Course Details and Fees ──

Please find more information about the course and fees here:

https://cloudxlab.com/course/169/data-analysis-with-python

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