DATA SCIENCE

POWERED BY 3RI TECHNOLOGIES

Mastering in Data Science

Premium Corporate Training

3ritechnologies.com

About us

Company Highlights

3RI is an Advanced Technology Education Platform providing advanced and professional training in Data Analytics that helps freshers and professionals rise to the advanced skills requirements of the current industry.

Powered by 3RI Technologies, these classroom training sessions are industry-oriented courses on Data Science, Machine Learning, and Python by top-class faculty who have more than 7+ years of experience in the same domain.

The curriculum is designed by industry experts, who have real-time scenario-based exercises and case studies and projects using databases from companies like Walmart, Amazon, Google, etc. This training is supported with teaching assistance which allows individuals to develop hands-on skills by applying the concepts and becoming technically proficient.

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Brochure Highlights

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Faculty

The Representers

We have the best team of trainers who are working at senior-most positions in top IT companies like Infosys, Cognizant, Accenture, and so on.

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Subjects & Tracks

What makes 3RI different?

3RI has a holistically designed curriculum designed by our expert team of trainers with 8+ years of industry experience. 3RI offers the perfect recipe for success through regular assignments and projects.

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Fundamentals of Statistics & Data Science

1. Fundamentals of Data Science and Mathematical Statistics

- Introduction to Data Science
- Need of Data Science
- BigData and Data Science
- Data Science and machine learning
- Data Science Life Cycle
- Data Science Platform
- Data Science Use Cases
- Skill Required for Data Science

2. Mathematics For Data Science

- Linear Algebra
  1. Vectors
  2. Matrices
- Optimization
  1. Theory Of optimization
  2. Gradients Descent

3. Introduction to Statistics

- Descriptive vs Inferential Statistics
- Types of data
- Measures of central tendency and dispersion
- Hypothesis & inferences
- Hypothesis Testing
- Confidence Interval
- Central Limit Theorem

Fundamentals of Statistics & Data Science

4. Probability and Probability Distributions

- Probability Theory
- Conditional Probability
- Data Distribution
- Distribution Functions

1. Normal Distribution
2. Binomial Distribution

MS EXCEL: Data handling on SPREADSHEET

1. Using a Spreadsheet

- What is Excel?
- Why Use Excel?
- Excel Overview
- Excel Ranges, Selection of Ranges
- Excel Fill, Fill Copies, Fill Sequences, Sequence of Dates
- Excel adds, move, and delete cells
- Excel Formulas
- Relative and Absolute References

2. Functions

- SUM
- AVERAGE
- COUNT
- MAX & MIN
- RANDBETWEEN
- TRIM
- LEN
- CONCATENATE
- TODAY & NOW

MS EXCEL: Data handling on SPREADSHEET

3. Advanced Functions

- Excel IF Function
- Excel If Function with Calculations
- How to use COUNT, COUNTIF, and COUNTIFS Function?
- Excel Advanced If Functions

4. Data Visualization

- Excel Data Analysis - Data Visualization
- Visualizing Data with Charts
- Chart Elements and Chart Styles
- Data Labels
- Quick Layout

RDBMS: SQL in detail

- An Introduction to RDBMS & SQL
- Data Retrieval with SQL
- Pattern matching with wildcards
- Basics of sorting
- Order by clause
- Aggregate functions
- Group by clause
- Having clause
- Nested queries
- Inner join
- Multi join
- Outer join
- Adding and Deleting columns
- Changing column name and Data Type
- Creating Table from existing Table
- Changing Constraints Foreign key

Python for Data Science

1. An Introduction to Python

- Why Python, its Unique Feature, and where to use it?
- Python Environment Setup/shell
- Installing Anaconda
- Understanding the Jupyter notebook
- Python Identifiers, Keywords
- Discussion about installed modules and packages

2. Conditional Statement, Loops and File Handling

- Python Data Types and Variable
- Condition and Loops in Python
- Decorators
- Python Modules & Packages
- Python Files and Directories manipulations
- Use various files and directory functions for OS operations

Python for Data Science

3. Python Core Objects & Functions

- Built-in modules (Library Functions)
- Numeric and Math's Module
- String/List/Dictionaries/Tuple
- Complex Data structures in Python
- Python built-in function
- Python user defined functions

4. Introduction to NumPy

- Array Operations
- Arrays Functions
- Array Mathematics
- Array Manipulation
- Array I/O
- Importing Files with Numpy

5. Data Manipulation with Pandas

- Data Frames
- I/O
- Selection in DFs
- Retrieving in DFs
- Applying Functions
- Reshaping the DFs - Pivot
- Combining DFs
- Merge, Join
- Data Alignment

Python for Data Science

6. SciPy

- Matrices Operations
- Create matrices
- Inverse, Transpose, Trace, Norms, Rank, etc
- Matrices Decomposition
- Eigen Values & vectors
- SVDs

7. Visualization with Seaborn

- Seaborn Installation
- Introduction to Seaborn
- Basics of Plotting
- Plots Generation
- Visualizing the Distribution of a Dataset
- Selection color palettes

8. Visualization with Matplotlib

- Matplotlib Installation
- Matplotlib Basic Plots & it's Containers
- Matplotlib components and properties
- Pylab & Pyplot
- Scatter plots
- 2D Plots

Python for Data Science

- Histograms
- Bar Graphs
- Pie Charts
- Box Plots
- Customization
- Store Plots

9. SciKit Learn

- Basics
- Data Loading
- Train/Test Data generation
- Preprocessing
- Generate Model
- Evaluate Models

10. Descriptive Statistics

- Observations, variables, and data matrices
- Types of variables
- Measures of Central Tendency
- Arithmetic Mean / Average

1. Merits & Demerits of Arithmetic Mean and Mode
2. Merits & Demerits of Mode and Median
3. Merits & Demerits of Median Variance

Python for Data Science

11. Probability Basics

- Notation and Terminology
- Unions and Intersections
- Conditional Probability and Independence

12. Probability Distributions

- Random Variable
- Probability Distributions
- Probability Mass Function
- Parameters vs. Statistics
- Binomial Distribution
- Poisson Distribution
- Normal Distribution
- Standard Normal Distribution
- Central Limit Theorem
- Cumulative Distribution function

13. Tests of Hypothesis

- Large Sample Test
- Small Sample Test
- One Sample: Testing Population Mean
- Hypothesis in One Sample z-test
- Two Sample: Testing Population Mean

Python for Data Science

- One Sample t-test - Two Sample t-test
- Paired t-test
- Hypothesis in Paired Samples t-test
- Chi-Square test

14. Data Analysis

- Case study- Netflix
- Deep analysis on Netflix data

Machine learning

1. Exploratory Data Analysis

- Data Exploration
- Missing Value handling
- Outliers Handling
- Feature Engineering

2. Feature Selection

- Importance of Feature Selection in Machine Learning
- Filter Methods
- Wrapper Methods
- Embedded Methods

3. Machine Learning: Supervised Algorithms Classification

- Introduction to Machine Learning
- Logistic Regression
- Naïve Bays Algorithm
- K-Nearest Neighbor Algorithm
- Decision Trees
  1. SingleTree
  2. Random Forest
- Support Vector Machines
- Model Ensemble

Machine learning

- Model Evaluation and performance

1. K-Fold Cross-Validation
2. ROC, AUC, etc...

- Hyper parameter tuning

1. Regression
2. classification

4. Machine Learning: Regression

- Simple Linear Regression
- Multiple Linear Regression
- Decision Tree and Random Forest Regression

5. Machine Learning: Unsupervised Learning Algorithms (

- Similarity Measures
- Cluster Analysis and Similarity Measures

6. Ensemble Algorithms

- Bagging
- Boosting
- Voting
- Stacking
- K-means Clustering

Machine learning

- Hierarchical Clustering
- Principal Components Analysis
- Association Rules Mining & Market Basket Analysis

7. Recommendation Systems

- Collaborative filtering model
- Content-based filtering model.
- Hybrid collaborative system

Artificial Intelligence & Deep Learning

1.Artificial Intelligence

- An Introduction to Artificial Intelligence
- History of Artificial Intelligence
- Future and Market Trends in AI
- Intelligent Agents – Perceive-Reason-Act Loop
- Search and Symbolic Search
- Constraint-based Reasoning
- Simple Adversarial Search (Game-Playing)
- Neural Networks and Perceptions
- Understanding Feedforward Networks
- Boltzmann Machines and Autoencoders
- Exploring Backpropagation

2.Deep Networks & Structured Knowledge

- Understanding Sensor Processing
- Natural Language Processing
- Studying Neural Elements
- Convolutional Networks
- Recurrent Networks
- Long Short-Term Memory (LSTM) Networks

3.Natural Language Processing

- Natural Language Processing
- NLP in Python

Artificial Intelligence & Deep Learning

- Studying Deep Learning
- Artificial Neural Networks
- ANN Intuition
- Plan of Attack
- Studying the Neuron
- The Activation Function
- Working of Neural Networks
- Exploring Gradient Descent
- Stochastic Gradient Descent
- Exploring Back propagation

4.Artificial and Conventional Neural Network

- Understanding Artificial Neural Network
- Building an ANN
- Building Problem Description
- Evaluation the ANN
- Improving the ANN
- Tuning the ANN

Artificial Intelligence & Deep Learning

5.Image Processing / Machine Vision

- Image basics
- Loading and saving images
- Thresholding
- Bluring
- Masking
- Image Augmentation

6.Conventional Neural Networks

- CNN Intuition
- Convolution Operation
- ReLU Layer
- Pooling and Flattening
- Full Connection
- Softmax and Cross-Entropy
- Building a CNN
- Evaluating the CNN
- Improving the CNN
- Tuning the CNN

7.Recurrent Neural Network

- Recurrent Neural Network
- RNN Intuition
- The Vanishing Gradient Problem
- LSTMs and LSTM Variations

Artificial Intelligence & Deep Learning

- Practical Intuition
- Building an RNN
- Evaluating the RNN
- Improving the RNN
- Tuning the RNN

8.Time Series Data

- Introduction to Time series data
- Data cleaning in time series
- Pre-Processing Time-series Data
- Predictions in Time Series using ARIMA, Facebook Prophet models.

GIT: Complete Overview

- Introduction to Git & Distributed Version Control
- Life Cycle
- Create clone & commit Operations
- Push & Update Operations
- Stash, Move, Rename & Delete Operations

Machine Learning in Cloud

Machine Learning Features & Services

- Using python in Cloud
- How to access Machine Learning Services
- Lab on accessing Machine learning services
- Uploading Data
- Preparation of Data
- Applying Machine Learning Model
- Deployment by Publishing Models using AWS or other cloud computing

Data Visualization with Tableau

1.Introduction to Data Visualization & Power of Tableau

- Architecture of Tableau
- Product Components
- Working with Metadata and Data Blending
- Data Connectors
- Data Model
- File Types
- Dimensions & Measures
- Data Source Filters
- Creation of Sets

2.Scatter Plot

- Gantt Chart
- Funnel Chart
- Waterfall Chart
- Working with Filters
- Organizing Data and Visual Analytics
- Working with Mapping
- Working with Calculations and Expressions
- Working with Parameters
- Charts and Graphs
- Dashboards and Stories

Project Work and Case Studies

- Machine Learning end to end Project blueprint
- Case study on real data after each model.
- Regression predictive modeling - E-commerce
- Classification predictive modeling - Binary Classification
- Case study on Binary Classification – Bank Marketing
- Case study on Sales Forecasting and market analysis
- Widespread coverage for each Topic
- Various Approaches to Solve Data Science Problem
- Pros and Cons of Various Algorithms and approaches
- Amazon-Recommender
- Image Classification
- Sentiment Analysis

Project Domain: FINANCE

- The insurance company wants to decide on the premium using various parameters of the client.
- It's an important problem to keep the clients and attract new ones.

By completing this Project you will learn:

- How to collect data?, how to justify the right features? , Which ML / DL model is best in this situation? How much data is enough?
- How to have CI/CD in the project?
- How to do Deployment of Project to cloud?

Image Processing in Health care

- A hospital wants to automate the Detection of pneumonia in X-rays using image processing.

By completing this Project you will learn:

- How to handle image data? How to preprocess and augment image data?
- How to choose the right model for the image process?
- How to apply transfer learning in image processing?
- How to do incremental learning & CI/CD in the project?
- How to do Deployment of Project to cloud?

Natural Language Processing

- One of the companies wants to automate applicant's level in English communication.
- Create a ML/DL model for this task.

By completing this Project you will learn:

- How do convert text to the right representation?
- How to preprocess text data? How to select the right ML/DL model for text data?
- How to do transfer learning in Text Analytics?
- How to do CI/CD in a text analytics project?
- How to do Deployment of Project to cloud?

Mechanical

- A mechanical company wants to perform predictive maintenance of engine parts.
- This enables the company to efficiently change parts before the machine fails.

By completing this Project you will learn:

- How to handle time-series data?
- How to preprocess time series data?
- How to create ML/DL model for Time-series Data?
- How to do CI/CD in a text analytics project?
- How to do Deployment of Project to cloud?

Sales / Demand Forecasting

- Predict the sales/demand of a product of a company.
- Sales / Demand forecasting of the product will help the company efficiently manage the resources.
- Create a ML/DL model for this problem.

By completing this Project you will learn:

- How to handle time-series data?
- How to preprocess time series data?
- How to create ML/DL model for Time-series Data?
- How to do CI/CD in a text analytics project?
- How to do Deployment of Project to cloud?

Placement Support

Placement at Our Client's Location

Interview Preparartion

Resume Workshop by Experts

Real World Application Integration in Resume

Exclusive Sessions from Experts

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FAQ's

- **Do I need to purchase any Software ?**

  No, we provide necessary installation guides of the software required.

- **What are the specific System Requirements ?**

  8 GB RAM, 500GB Hard disk (i3 Processor).

- **What are Projects ?**

  Projects are real world datasets from companies like Nike, Yelp,Amazon, Netflix etc. that are provided to our students.

Who We Are?

Siddhant Sir

DATA SCIENTIST

Ranjeet Sir

CLOUD ARCHITECT

Krishna Ma'am

PYTHON EXPERT

* Images used for representation purpose

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