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Education | Training | Consulting

Education Icon of Hyderabad -2018
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Institute of the year - 2015
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Post Graduate Certificate Program in Data Science

Class Room I Online

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Institute of the year - 2015

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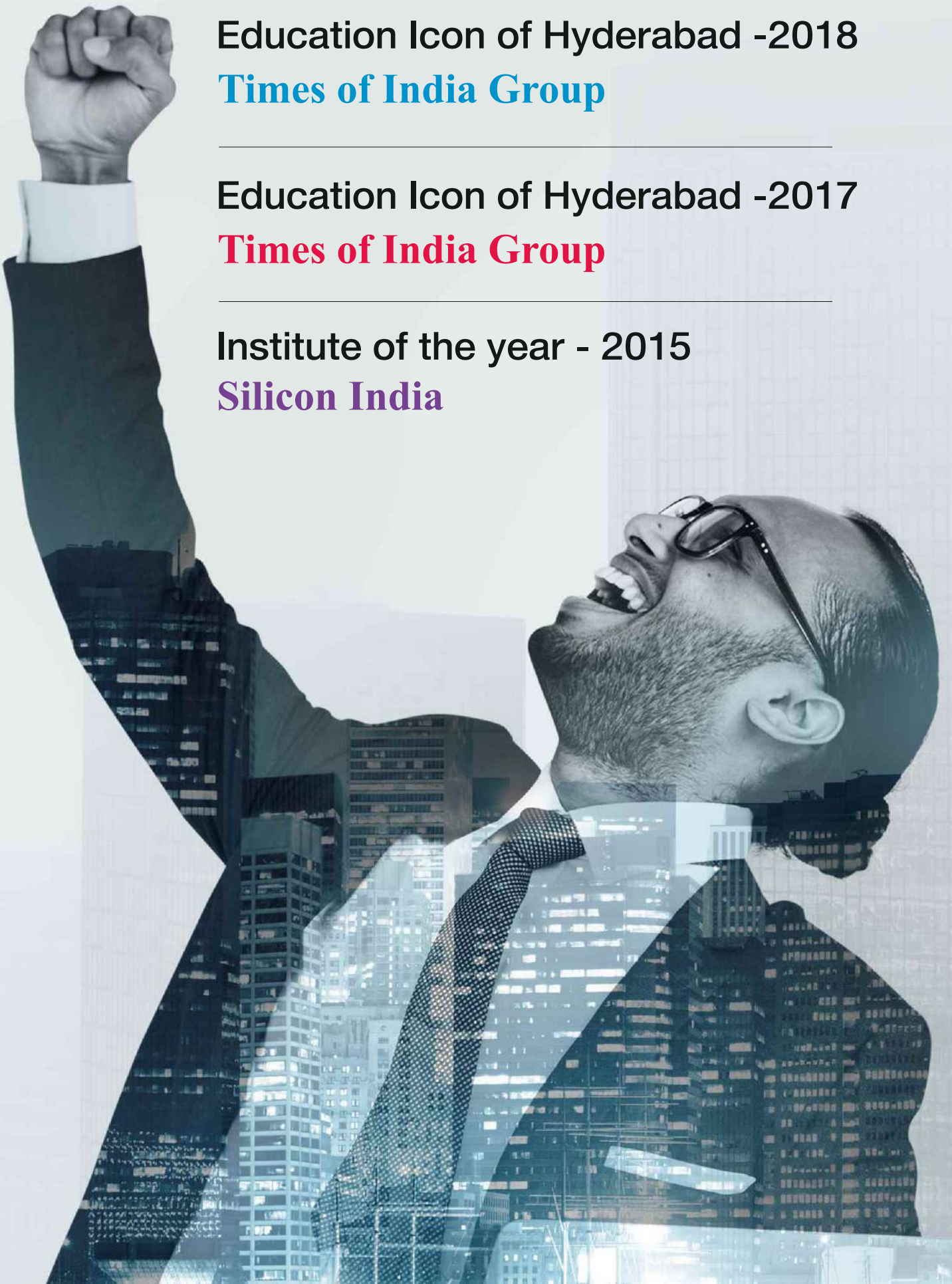

FACULTY

Our world class faculty hail from premier intuitions like IIT's & IIM and also eminent data scientists working with top notch companies across the globe.

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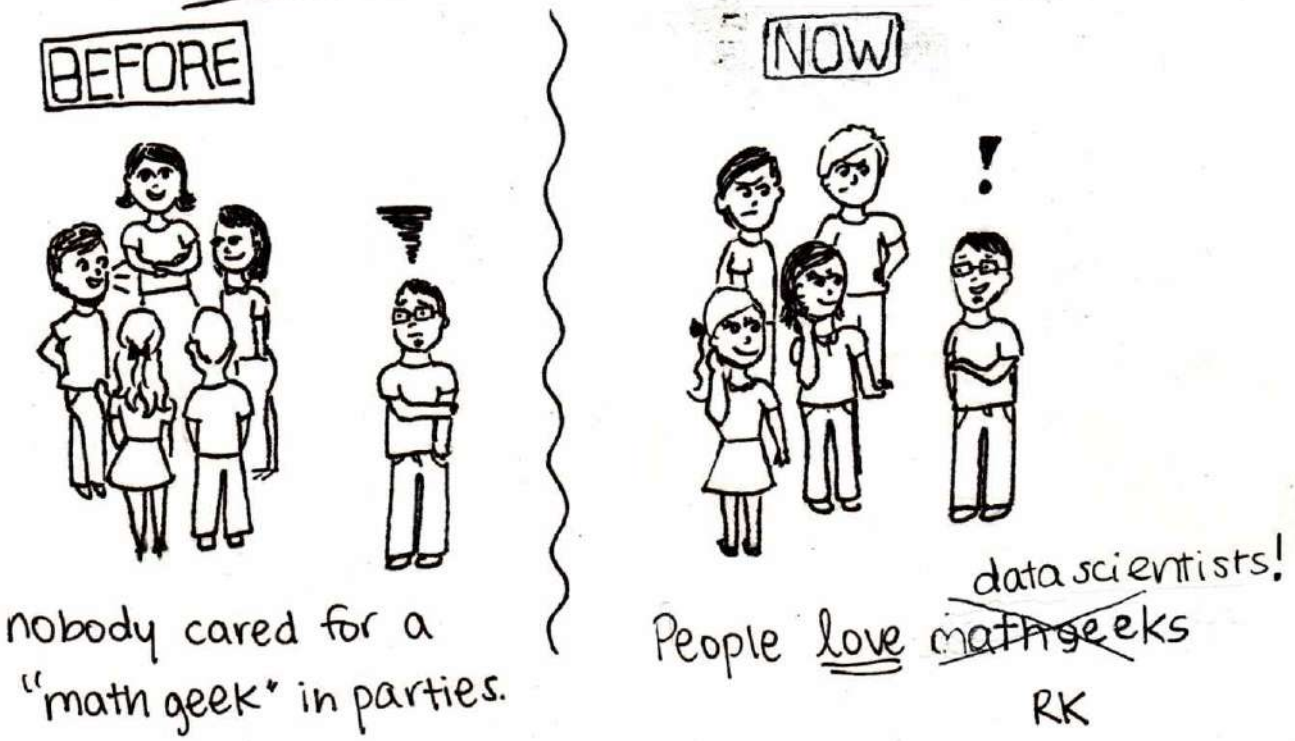
"Data Scientist is
the sexiest job
of the 21st century"

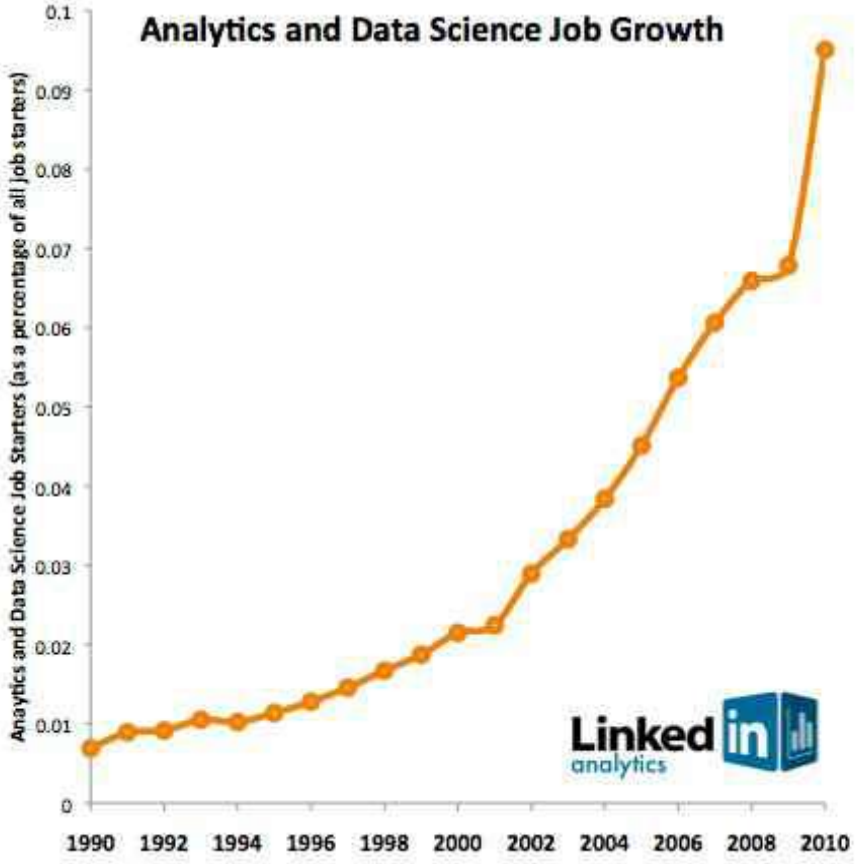
– Harward Business Review

“Data Scientists : The definition of sexy”

- forbes

The Rise of Data Scientists





Post Graduate Program in

Data Science

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Right from

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We have it all for students, working professionals who want to become aspiring Data Scientists

14+	06+	08+
Modules	Projects	Assessments

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CERTIFICATIONS

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  JAINx
  THE LEARNING HUB

- Digital Nest Certificate

SAMPLE CERTIFICATE

JAINx THE LEARNING HUB

CERTIFICATE of ACHIEVEMENT

ENDORSED BY

JGI JAIN DEEMED-TO-BE UNIVERSITY

This is to certify that

STUDENT ID:

Name of the Student

has successfully completed and received passing grades for a Verified Certificate in **POST GRADUATE PROGRAM IN DATA SCIENCE** a Program offered by Faculty of Sciences, JAIN (Deemed-to-be University) during the period MM YYYY- MM YYYY.

GRADE:

SKILLING PARTNER

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Verified by

Dr. Rajasimha A M
Program Director

CERTIFICATION ID

Date:

KEY HIGHLIGHTS

Training by Real Time Experts

Material, Case Studies & Assignments

One-On-One with Industry Mentors

Dedicated Student Manager

100% Assured Placement Assistance

Hands on Training

Doubt Clarification Sessions

Limited Strength

Resume & Interview Prep Guidance

Course is curated by subject matter experts in Data Science

Introduction to Data Science

- What is Data Science?
- Data Science Life Cycle
- What is Machine Learning?
- What is Business Analytics?
- What is Artificial Intelligence?
- Data Science vs Machine Learning vs AI
- Types of Data
- What is BigData?
- Software vs Data vs Cloud
- Real time applications on Machine Learning

Statistics

- Data Types
- Statistical parameters, variance, standard deviation, range
- Categorical and Quantitative Data
- Descriptive Statistics
- Statistical Inference
- Sampling and Sampling Distributions
- Correlation, Covariance and Causation
- Central Limit Theorem
- Confidence Interval
- Hypothesis Testing and error types
- t-test and types of t-test
- Analysis of Variance(ANOVA)
- Introduction to Probability
- Probability Distributions
- Bernoulli, Uniform, Binomial, Normal Distribution
- Poisson and Exponential Distribution
- Skew Normal Distribution
- Z-Score

Data Manipulation using SQL

- Introduction to SQL and Data bases
- SQL developer installation
- Data types
- Data types and Operators
- Create and Drop data base
- DDL,DML, DCL ,TCL, Sorting commands and other keywords
- Advanced SQL-Wild cards, Constraints, Joins, Unions, NULL, Alias, Truncate, Views, Sub queries
- Exam

Exploratory Data Analysis (EDA) and Data Visualization

- What is EDA and its importance
- Statistical approach(Data Collection, Descriptive statistics, Data Mining)
- Importing the Data
- DataFrames
- Variables, Transformation
- Standardization and Normalization
- Validation and Interpretation
- Distributions
- Histograms, Outliers
- Summarizing distributions
- Graphs
- Bar Charts
- Box-whisker plot
- Scatter plot
- Pie Charts
- Bubble Charts

R Programming :

- Why R and importance of R in analytics
- Installation guidelines for R and R-studio
- Working Directories
- Data Types
- Operators
- Loops- For and While
- If-else statements, Nested statements
- Objects, and Vectors
- Strings
- Arrays
- Lists
- Factors
- Data Frames
- Pipe operator
- Functions
  (Predefined and Userdefined)
  apply, l-apply, s-apply, m-apply, t-apply, v-apply
  Subset/filter, which, sample, match, sort, mutate, grep, summary, gsub, select, groupby, gather, separate, Posixct
  Joins(Inner, Outer, Left, Right, Semi, Anti)in Data Frames.
- Univariate Analysis
- Dplyr, Lubridate, Tibble

Python Programming

- What is Python
- Importance of Python in Data Science
- Python Installation guidelines (Anaconda Navigator)
- Loops, Nested Loops, For, While loop
- Performance measurement of loops
- Loop control statements
- Continue, Break, Pass
- Class, Constructor and methods

Python Fundamentals

- Keywords
- Built-in Functions
- String Formatting
- Indexing
- Slicing
- Sequences
- Error handling in Python(try, catch, finally)
- Ignoring Warnings
- User-defined functions
- Nested functions
- Lambda, zip and map
- Local and global variables
- If-else statements, Nested statements
- Loops, Nested Loops, For, While loop
- Performance measurement of loops
- Loop control statements
- Continue, Break, Pass
- Class, Constructor and methods

Python Data Structures

- Lists, Lists Comprehensions
- Sets
- Tuple
- Dictionary
- Importance of each type

Data Handling with Python

- Introduction to NumPy, Pandas
- Arrays and Matrix
- Importing and exporting datasets in Python
- Creating Data Frames
- Data Manipulations
- Scikit-Learn libraries
- Data Visualizations in Python
- Matplotlib, Seaborn, and GGplot
- Feature Engineering: Feature Selection and Extraction
- Model Selection
- Training, Testing and K-Fold cross validation

Machine Learning :

Introduction to Machine Learning

- Types of Machine Learning
- What is Supervised, Un-Supervised and Reinforcement
- What are the types of each learning technique
- Algorithms used in Machine Learning techniques
- Difference between Data Science, Machine Learning and AI

Generalized Linear Models(GLM)

- Introduction to generalized linear models
- Regression vs Classification
- Understanding of Linear and Logistic Regression
- Underfitting and Overfitting
- Trade-off between Bias and Variance
- Regularization techniques (Ridge, Lasso, Elastic-Net Regression)
- Ordinary Least squares
- Maximum Likelihood
- Sigmoid Function
- Cost Function
- Gradient Descent
- One-hot Encoding
- Label Encoding
- Model Evaluation metrics
- Feature Engineering (Features Selection, Extraction)
- R-Square, Adjusted R-Square, RSME
- Confusion Matrix
- Evaluation metrics (Precision, Recall, F-Score, Accuracy)
- Sensitivity and Specificity
- ROC-AUC curves
- Assumptions of Linear Regression
- Techniques to improve model performance
- Imbalanced Data
- Sampling issues- Oversampling
- and Under sampling SMOTE, ADASYN and Near Miss

Decision trees and Random Forests :

- Introduction of Decision Tree and its applications
- Types of Decision Tree
- Terminologies in Decision Tree
- Pros and Cons of Decision Tree
- CHAID analysis
- Root nodes Identification
- Gini Index, Entropy, Chi-Square, Reduction in Variance
- Solution for overfitting in Decision Tree
- Tree pruning
- Hyperparameter tuning
- Random Search and Grid Search for auto selectionof parameters
- What is Bagging?
- Introduction to Random Forest and its applications
- Importance of Random Forest
- Significant feature selection using Random Forest classifier

Boosting Machines

- Ensembling Techniques
- Bagging vs Boosting
- Gradient Boosting Algorithms
- Gradient Descent in Boosting Algorithms
- Gradient Boosting Machines, XGBoost, and AdaBoost
- Regression and Classification boosting techniques
- Stacking
- Pros and Cons of boosting Machines

K-Nearest Neighbors (KNN)

- What is KNN and why we use it?
- KNN Classification and Regression
- Curse of dimensionality and introduction to dimensionality reduction
- Pros and Cons of KNN
- Outlier treatment and anomaly

Naïve Bayes and SVM

- What is Naïve Bayes
- Bayes theorem, Conditional Probability
- Real time applications
- Pros and cons of Naïve Bayes
- What is Support Vector Machines(SVM)
- Training time complexity
- SVM Classifier
- Hyperplane, margin and Kernel
- Hyperparameter tuning
- Linear and Non-Linear SVM

Dimensionality Reduction

- Introduction to Dimensionality Reduction and its importance
- Principal Component Analysis(PCA)
- Kernel PCA
- Singular Value Decomposition(SVD)
- Linear Discriminate Analysis(LDA)
- T-Distributed Stochastic Neighbor Embedding (t-SNE)
- Applications of Dimensionality Reduction

Time Series Forecasting

- Introduction to Forecasting
- Data processing and indexing time
- Time Series forecasting
- Understanding of Stats Models
- Auto Regressive Integrated Moving
- Average(ARIMA) model
- Components: Seasonality, Trend and Noise
- Autocorrelation
- Parameter Selection for ARIMA Time series
- Forecasting and Smoothing methods
- Forecasts Validation
- Simple moving average
- Exponentially weighted moving average

Clustering

- Introduction to Clustering
- K-means Clustering
- Elbow method
- Hierarchical Clustering
- Real time applications

Text Analytics

- Introduction to Text Analytics and Text Mining
- Introduction to NLP
- Real time applications
- Extracting text from files
- Data cleaning
- Introduction to NLTK library
- Count Vectorizer
- Understanding of Stopwords and regular expressions
- Stemming and Lemmatization
- Word Cloud
- N-grams
- Fuzzy String Matching
- Levenshtein Algorithm
- Jaro-Winkler Algorithm
- Cosine Similarity
- Named Entity Recognition(NER)

Chatbot Architecture

- NLP for Chatbot
- Understanding Rasa Framework
- Rasa NLU
- Named Entity Recognition (NER) using Spacy
- Intent Classification
- Rasa Core - Dialog Management
- Case study: Application of Chatbots in Banking Industry

Deep Learning

1. Neural Networks Architecture
2 Activation Functions
    a. Sigmoid
    b. Tanh
    c. ReLU
    d. Leaky ReLU
3 Forward & Backward Propagation
4 Understanding the Vanishing Gradient problem
5 Convolutional Neural Networks
    a. Filters/Kernels
    b. Convolution Operation for Edge detection
    c. Pooling & Zero padding
6 Understanding several CNN architectures
    a. AlexNet
    b. VGG16
    c. ResNet
    d. Inception
7 Object Detection using YOLO
8 Sigmoid v/s Softmax
9. Recurrent Neural Networks
    a. Tackling Long Range dependencies
    b. LSTM- Long Short Term Memory
    c. GRU
10. Seq2Seq Models for Machine Translation
11. Transformers
    a. Attention is all you Need
    b. BERT
    c. DistillBERT
    d. XLNet
12. Building Deep Learning Models using PyTorch
13. Tensorflow Framework
14. Tensors as MultiDimensional Arrays

Data Visualization Using Tableau

Introduction

- Installation of Trial Version of Tableau Public
- Design Flow
- Data Visualization
- Connecting Tableau to various Data Sources
- Measures and Dimensions
- Colors, Labeling and formatting
  Exporting Work sheet

Basics of Tableau

- A-B Ad-hoc Testing
- Aliases
- Reference Line
- Anomaly detection
- Sorts and Filters
- Time Series

Advanced Concepts of Tableau

- Trend Line Analysis
- Dash Board Creation
- Formatting in tableau
- Forecasting using Exponential Smoothing
- Granularity and Trimming
- Seasonality
- Animations
- Assignment

- Chart plotting
- Heat Maps
- Data Joining
- Data Blending

AWS for Data Science

- Why AWS for Machine Learning?
- Understanding several AWS services.
  a) KINESIS
  b) S3
  c) LAMBDA
  d) Ec2
  e) REDSHIFT
  f) SAGEMAKER
- Setting up an S3 bucket to store data.
- Practical Data Science with
  AWS Sagemaker
- Sagemaker Studio Notebooks
- Training and Evaluating an ML Model
- Deploying the Model

Big Data analysis with Spark

Introduction to Big Data analysis with Spark

- What is Big Data
- The 3 V's of Big Data
- PySpark : Spark With Python
- Understanding SparkContext
- Interactive use of Spark
- Loading data in Py Spark shell
- lambda() with map()
- lambda() with filter()

Programming in PySpark RDD's

- Abstracting data with RDD's
- RDDs from parallelized collections
- RDDs from external datasets
- Partitions in your data
- Basic RDD Transformations and actions
- Map and collect
- Filter and Count
- Pair RDDs in PySpark
- ReduceByKey and collect
- SortByKey and collect
- Advanced RDD Actions
- CountingByKeys

PySpark SQL & Dataframes

- Abstracting Data With Dataframes
- RDD to Dataframe
- Loading CSV to Dataframe
- Operating on DataFrames in PySpark
- Inspecting data in DataFrame
- Dataframe subsetting and cleaning
- Filtering your dataframe
- Interacting with dataframes using PySpark SQL

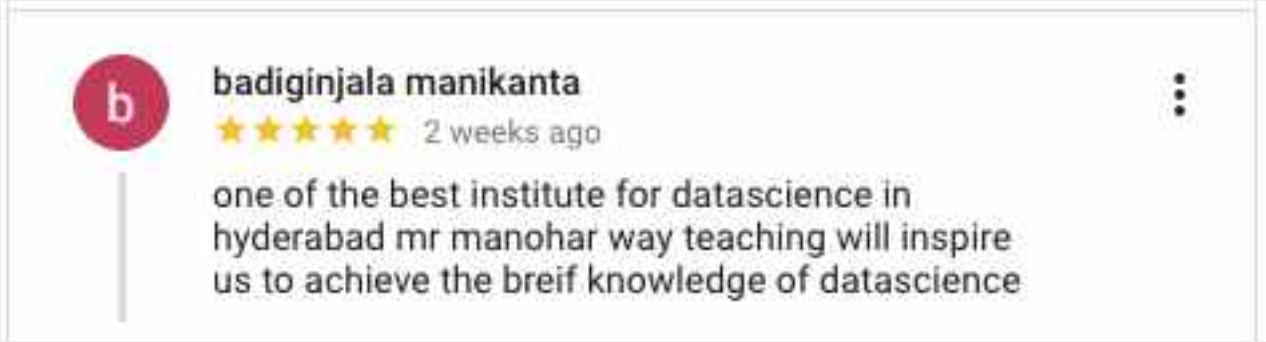
PySpark on Cloud

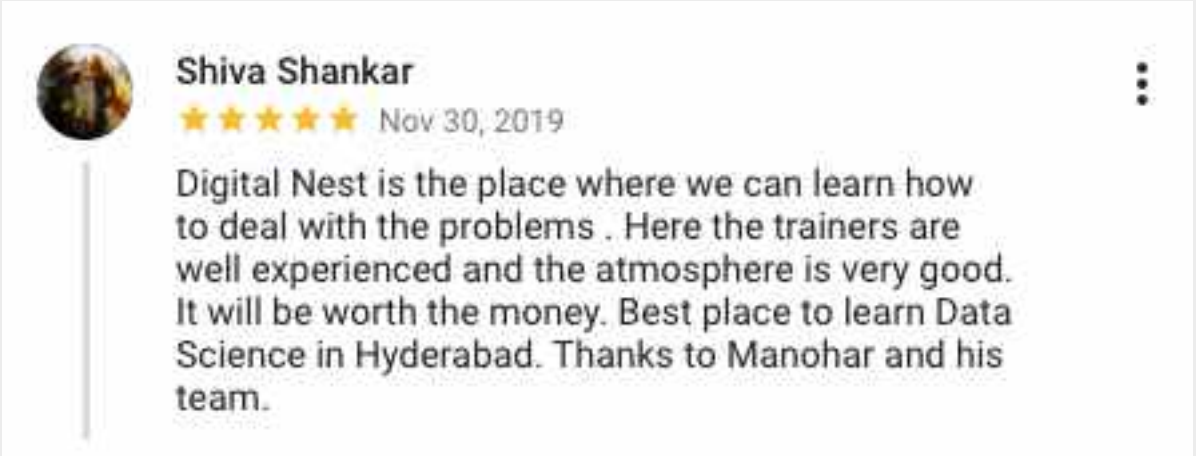
- Executing Spark programs on Azure
- Executing Spark programs on AWS

Capstone Projects & Assignment

1. Sentiment Analysis - **Amazon**
2. Churn Prediction - **Tele Communication**
3. Pneumonia Detection - **Health Care**
4. Fraud Detection - **Insurance**
5. Predictive Maintenance - **Microsoft**
6. Question & Answering - **Chatbot**

What our Trainees Say...





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Fee Breakup

Application Fee	:	Rs.1000/-
Admission Fee	:	Rs.20,000/-
Tuition Fee	:	Rs.1,00,000/-
Examination & Certification Fee	:	Rs.30,000/-

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- 100% placement assistance
- Learning modes include Classroom, Online
- Material, Case Studies & Assignments
- One-on-One with industry mentors
- Dedicated student manager
- Trainers with 15+ years of experience in data science.
- Resume & interview preparation guidance
- Course is curated by subject matter experts in data science
- Learning using world class learning management system
- Dedicated placement manager for interview process
- Connect and network with alumni ,working with different organizations
- Unique job portal to access jobs and internships posted by HR's from various companies

Terms & Conditions:

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* Avail EMI facility from top financial institutions
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DURATION

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ELIGIBILITY

Bachelor's degree (10+2+3/4) or equivalent qualification in any discipline from a recognized University with a minimum 55% score.

OR

Students who have appeared for their final year degree examination can also apply, however, their admission will be provisional and will be confirmed only after producing the results.

CERTIFICATIONS

Certification from **JAINX**

Digital Nest Certificate

ROLES

Data Scientist, Data Engineer, Machine Learning Scientist, Business Analytics Specialist, Data Visualization Developer, BI Engineer, BI Solution Architect, BI Specialist, Analytics Manager, Machine Learning Engineer, Statistician, Data Mining Specialist, Natural Language Programmer, Spatial/GIS Analyst, Neuroscientist, Information Architect, Financial Analyst, Pythonist, AI Researcher, Social Science Researcher, Computational Physicist.

AVG PACKAGES

3.2-5 Lakh p.a. (Fresher) | 5-15 Lakh p.a. (Experienced)

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Must be a Graduate

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