Artificial Intelligence Training Syllabus

Introduction to Deep Learning & AI

Deep Learning: A revolution in Artificial Intelligence

- Limitations of Machine Learning

What is Deep Learning?

- Need for Data Scientists
- Foundation of Data Science
- What is Business Intelligence
- What is Data Analysis
- What is Data Mining

What is Machine Learning?

Analytics vs Data Science

- Value Chain
- Types of Analytics
- Lifecycle Probability
- Analytics Project Lifecycle
- Advantage of Deep Learning over Machine learning
- Reasons for Deep Learning
- Real-Life use cases of Deep Learning
- Review of Machine Learning

Data

- Basis of Data Categorization
- Types of Data
- Data Collection Types
- Forms of Data & Sources
- Data Quality & Changes
- Data Quality Issues
- Data Quality Story
- What is Data Architecture

- Components of Data Architecture
- OLTP vs OLAP
- How is Data Stored?

Big Data

- What is Big Data?
- 5 Vs of Big Data
- Big Data Architecture
- Big Data Technologies
- Big Data Challenge
- Big Data Requirements
- Big Data Distributed Computing & Complexity
- Hadoop
- Map Reduce Framework

Data Science Deep Dive

- What Data Science is
- Why Data Scientists are in demand
- What is a Data Product
- The growing need for Data Science
- Large Scale Analysis Cost vs Storage
- Data Science Skills
- Data Science Use Cases
- Data Science Project Life Cycle & Stages
- Data Acuqisition
- Where to source data
- Techniques
- Evaluating input data
- Data formats
- Data Quantity
- Data Quality
- Resolution Techniques
- Data Transformation
- File format Conversions
- Annonymization

Python

- Python Overview
- About Interpreted Languages

- Advantages/Disadvantages of Python pydoc.
- Starting Python
- Interpreter PATH
- Using the Interpreter
- Running a Python Script
- Using Variables
- Keywords
- Built-in Functions
- StringsDifferent Literals
- Math Operators and Expressions
- Writing to the Screen
- String Formatting
- Command Line Parameters and Flow Control.
- Lists
- Tuples
- Indexing and Slicing
- Iterating through a Sequence
- Functions for all Sequences

Numpy & Pandas

- Learning NumPy
- Introduction to Pandas
- Creating Data Frames
- GroupingSorting
- Plotting Data
- Creating Functions
- Slicing/Dicing Operations.

Deep Dive – Functions & Classes & Oops

- Functions
- Function Parameters
- Global Variables
- Variable Scope and Returning Values. Sorting
- Alternate Keys
- Lambda Functions
- Sorting Collections of Collections
- Classes & OOPs

Statistics

- What is Statistics
- Descriptive Statistics
- Central Tendency Measures
- The Story of Average
- Dispersion Measures
- Data Distributions
- Central Limit Theorem
- What is Sampling
- Why Sampling
- Sampling Methods
- Inferential Statistics
- What is Hypothesis testing
- Confidence Level
- Degrees of freedom
- what is pValue
- Chi-Square test
- What is ANOVA
- Correlation vs Regression
- Uses of Correlation & Regression