



Certified

Advanced Data Science and AI Program

WITH JOB GUARANTEE OR 100% MONEY BACK

Live Online Interactive Mode

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Program Highlights

Live sessions
by expert



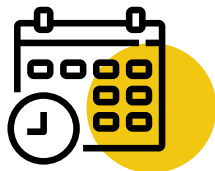
300+ hours of online/classroom training led by Industrial Experts with interactive sessions + one on one doubt solving.

Project based
learning



Practice with 15+ real world projects and 2 capstone project from multiple domains to practically execute AIML

3 year of
flexible pass



Flexibility to attain multiple batches from different trainers and a life time access to study material, recorded sessions.

Support to non-
programmers



Non programmers can learn python from basic to advance with real time use cases from multiple domain

Global
certification



Industry Accredited IBM Certified AI and ML program with global recognition to add some value in your profile.

Job Guarantee
or Money back



Get assured job in top MNC's and start-up companies as a Data Scientist/AI Expert. If we fail to do that get 100% money back.

Program Details

Eligibility Criteria

Candidates should have 2 to 8 years of experience in IT or non/IT domain. Working gap cannot be more than 2 years.

Qualification:

BE/B.Tech (from any branch) , BBA/MBA, MCA/M.Tech, B.Com, Graduation in Mathematics, Statistics, IT

About Instructors

Our instructors are working professionals graduated from premier institutes like BITS Pilani, IIT Roorkee and working in companies as Artificial Intelligence, Data Scientist, Machine Learning expert.

Who Should Apply

- Software developers/Programmers, Project Managers, Manual And Automation Test Engineer, Java and .net Developer, Informatica, Business Analyst.
- Database Admin, System Admin, Professionals from Sales, Marketing, Operations.
- SAP domain expert, Python , Embedded developer , Android/ios developer.
- Professionals from BFSI, Supply chain, Retail, healthcare, Pharma.
- Manufacturing, Mechanical, Electrical, Automobiles, Telecom domain. We have domain specific project from these sectors.
- Professionals planning for Masters or higher education in Artificial Intelligence

There is no prerequisite for the program as everything will be covered from basic to advance (programming & statistics)

Modules & Tools



Python



Statistics



Machine Learning



Google Cloud Platform



GitHub



Computer Vision



Natural Language Processing



Deep Learning using Tensorflow



Time Series Analysis & Forecasting



Keras



OpenCV

PYTORCH

Domains covered

Banking



E- Commerce



Manufacturing



Healthcare



Aerospace



Finance



Insurance



Supplychain



Telecom



Retail



Global Certification

Become an industry expert With Artificial Intelligence Master's Program in collaboration with IBM. Upon completion of this Program, you will receive the certificates from IBM which will help you to become industry ready.

Get Industry-renowned global certification in Artificial Intelligence. Our certification is recognized globally and industry wide in companies like JP Morgan, Morgan Stanley, Wells Fargo, Antuit , Genpact, Cognizant, Delloite, E&Y, Tredence Analytics, Mu-sigma and other top MNC's and Banking & Finance companies.



This is to certify that

Your Name

has completed all courses in the learning path

Artificial Intelligence Certification

a learning path on learnvista.skillsnetwork.site

Powered by **IBM Developer Skills Network**

Issued by

Learnbay Data Science And AI

Artificial Intelligence Certification consists of the following courses:

- Machine Learning with Python
- Deep Learning Fundamentals

Rav Ahuja
Program Director
Skills Network, IBM

Issued on:

December 11, 2019

Authenticity of this certificate can be validated by going to:

<https://learnvista.skillsnetwork.site/learn/artificial-intelligence-certification-program>

Krishna Kumar
Founder and CEO
Learnvista Pvt. Ltd.

Download Certificate

Why enroll for this program



Learnbay is specialized in providing personalized courses in Data Science and Artificial Intelligence. We are headquartered in **Bengaluru**, the IT hub of India, and are partnered with IBM since 2019. Our courses have so far helped several talented aspirants from different parts of the world to launch their career in Data Science and AI successfully.

Since the beginning from 2015, we have strongly believed in **quality**, we would never take a chance in compromising with anything lesser than the best quality. Thus, our trainers are without exception, highly experienced field experts.

Learnbay offers instructor-led interactive program with live doubt solving session as learning from recorded videos can be boring.



Get hands-on experience with 15+ real time projects and 2 capstone projects, as learning data science would be incomplete without knowing it's practical approach.

As per the industrial requirement 2 or 3 modules is not sufficient, hence we offer a Full Stack program specially crafted for working professionals.



Get 1:1 doubt clearing session with expert after your live class. Flexibility to batches, get back up classes and attain session from multiple instructors.

We over our program with complete flexibility to attain Live/Classroom Session for 3 years and Life - Time Access of LMS. With access to change batches, instructors, etc.



Demo Recordings

```
#=====  
def Random():  
    alphabet = "abcdefghijklmnopqrstuvwxyz"  
    length = 8  
    new_password = ""
```

[Python Recording](#)



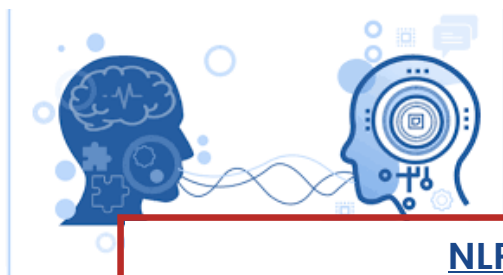
[Statistics](#)



[Machine Learning](#)



[Deep Learning](#)



[NLP](#)



[R Programming](#)



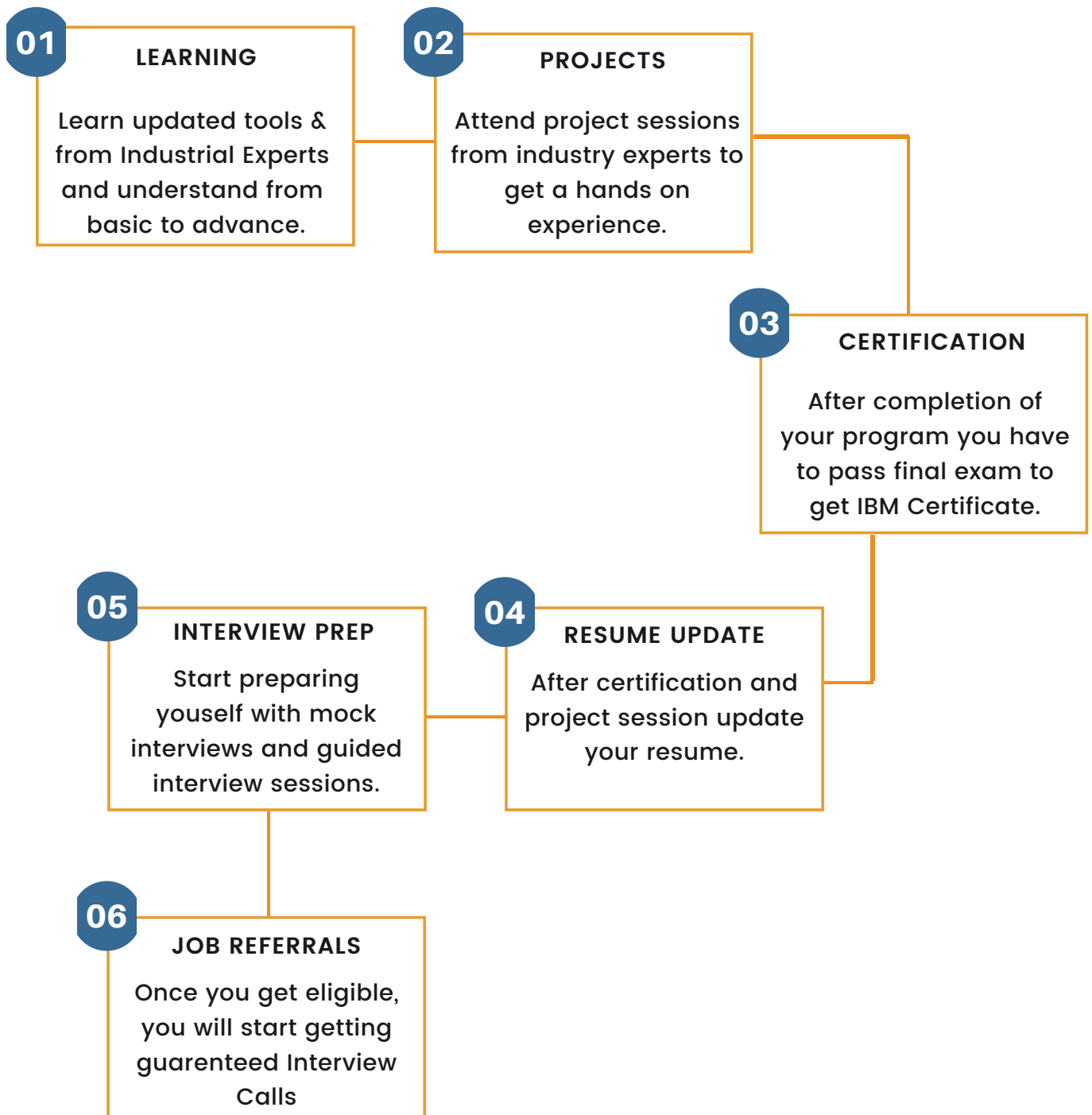
[Real Time Projects](#)



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DATA SCIENCE AND AI VIDEOS

Transition Process



To know more about Guaranteed Interview call,
Job Referral & Industrial Projects



Placement & Success Stories

Shezan Baig

Working at Accenture AI



Learnbay is one of the most remarkable data science institutes I've come across. In comparison to other institutes in India, it offers a data science course at a low cost. Excellent value for money. I would strongly advise everyone to attend this institute. All of the trainers are excellent in their own subject, but the Stats & ML trainer in particular is outstanding.

 [View LinkedIn profile](#)

Viraj Ghodke

Working at Affine Analytics



For me, learning using the Learnbay platform has been a great experience. The teaching and management team are very helpful. They are constantly willing to clarify each individual's doubts and meet the needs of working professionals. I owe my gratitude to the trainers and the whole Learnbay team for assisting me in getting placed.

 [View LinkedIn profile](#)

Pooja Sharma

Working at Learnvista



I have done Data Science and AI certification and got placed within 8 months. Journey was really tough for me because i was from mechanical domain. But the mentors were really helpful and they have good industrial knowledge. Facility of recording classes is very useful.

 [View LinkedIn profile](#)

Shubhangi J. Waghmare

Working at Infracore Technologies



The offering here is best in the industry I would say both cost and curriculum wise. One advantage joining here is you can access their resources for lifetime unlike others where you have accessibility only for a year or so. Most importantly, there is continuous assistance for recruitment. Well,one enrolls for any course and ends up getting a handsomely paying job.

 [View LinkedIn profile](#)

Pawan Yadav

Working at Oracle



I have done Data Science certification and i placed in Oracle. Journey was really tough for me because i was from core electronics domain. Mentors are really helpful and they have good knowledge. Personally i liked teaching style of Trainer Nishant. Facility of recording classes is very useful.

 [View LinkedIn profile](#)

Suman Karmakar

Working at IBM



It was a good and effective course with dedicated faculties for modules. You get flexibility to attend classes from multiple instructors. Very Supportive environment for learning.

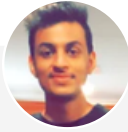
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Placement & Success Stories

Neelesh Dugar

Working at Act21 Softwares

Very well designed and structured. I really appreciate him and would want to put some light on Utkarsh Kulshrestha. Cheers to you guys! I had an amazing experience at Learnbay, which got me where I am today. Thank you to each one of you and also Abhishek who is handling very well. All the best guys!!



Deevraj

Working at Mindtree

The quality of content is very nice mainly the instructor concentrating on the practical part, live project sessions make you feel confident to attend interviews. Multiple batch options, access for any instructor class videos or materials. Totally positive environment around. One can join here with no second thought.



Srikanth Saurav

Working at Mediamarksaturn

Machine Learning concepts & Statistics are very well explained by Utkarsh. Best thing was completing the syllabus on-time as they have promised. Trainers are clearing the doubts. Got multiple joining offers from different MNCs for Data Science and AI developer



Read more reviews



Watch Transition Videos



View LinkedIn profile



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Program Fees

Program Fee

Rs. 1,25,000 +18% GST

Weekday Batches : 13 Months

Monday - Friday
2 hours everyday

Weekend Batches : 15 Months

Saturday & Sunday
3.5 hours everyday

Payment modes

**INTEREST FREE INSTANT LOAN
WITHOUT CREDIT CARD**

Aadhaar Card, Pan Card & 3
months salary slip required

**NO COST EMI UPTO 9 MONTHS ON
MAJOR CREDIT CARDS**

ICICI, HDFC, RBL, Standard
Chartered, Axis bank, Kotak credit
cards

UPI, Net Banking, Bank Transfer, No Cost EMI (Credit Cards), Interest Free Loan

GENERATE DISCOUNT COUPON

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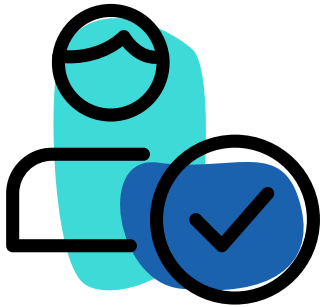
This program comes with a 100% Job Guarantee or total Money would be refunded. To avail this policy candidates must fulfill all the Terms and Conditions decided by Learnbay.

To know detailed information about Terms and Conditions click on the button below.

[Terms & Conditions](#)

How to apply

Talk to Our Admission Executive



Qualification: BE, B. Tech, ME, M.Tech. BCA, MCA (Any Branch), MBA, Etc. All technical or managerial degree. Professionals having 8 to 15 years of experience in any domain. To know more about Eligibility Whatsapp Us

[Whatsapp Now](#)

Attend Personalised Career Counselling and profile review session with expert. This session will help you to understand whether your profile is suitable for Data Science and AI certification course.

[Apply For Profile Review](#)

Talk to our admission executive & get your profile reviewed



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Contact our Admission Officer for discount coupon. Apply the discount coupon and enrol for IBM certified Program.

Payment Mode: Debit Card, Credit Card, UPI, Bank Transfer, Interest Free Loan, No Cost EMI (Credit Card)

[Pay and Enroll for the program](#)

Syllabus

MODULE 0

Special classes for Non-programmers – GitHub + Installation + Basic programming fundamentals

4 days (8 hours)

TERM 1

Core Python + Advance Python (Numpy + Pandas + Matplotlib + Seaborn)

40 hours :: 1 Month Weekday :: 1.25 Months Weekend

TERM 2

Statistics + Machine Learning + Capstone Project

(70 hours) :: 1.75 Months Weekday :: 2.25 Months Weekend

TERM 3

SQL + MongoDB + Tableau + PowerBI + Hadoop basics & Apache Spark + R Programming

(70 hours) :: 1.75 Months Weekday :: 2.25 Months Weekend

TERM 4

Advance Deep Learning + Advance NLP & Text Analytics + Cloud Deployment of ML Model using GCP + Computer Vision + Reinforcement Learning + Capstone Project

(100 hours) :: 2.5 Months Weekday :: 3 Months Weekend

Final Exam Certification After Term 3

Important Note :

After Successful completion of term 1, term 2 and term 3, Candidates become eligible for Job Assistance Program (2- 3 weeks) which includes :

- Resume Session and Assistance
- Interview Prep Session & Mock Interview
- Participating in Live Kaggle Competitions
- Guaranteed Job Referrals for AI/ML engineer roles
- You can start attending interviews after Term 3 and keep learning other modules from Term 4 simultaneously.
- Attend guided session for real time projects from multiple domain and get project Support/Mentorship from expert instructors.

Chapter 1: Introduction to Programming (2 hrs)

What is a programming language ?
Source code Vs bytecode Vs machine code
Compiler Vs Interpreter
C/C++, Java Vs Python

Chapter 2: Jupyter notebook basics (1 hrs)

Different type of code editors in python
Introduction to Anaconda and jupyter notebook
Flavours of python.

Chapter 3: Python Programming Basics (2 hrs)

Variable Vs identifiers Vs strings
Operators Vs operand
Procedure oriented Vs modular programming

Chapter 4: Statistics basics (1 hrs)

Introduction to statistics
Mean, median, mode, Standard deviation, Average
Introduction to probability, permutations and combinations
Introduction to linear Algebra

Chapter 5: Git and GitHub (2 hrs)

Learn the key concepts of the Git source control system
Step through the entire basic Git workflow
Configure SSH for authentication
Create and use a remote repository on GitHub
Git Overview
Set up & configuration
Working with git locally

[NOTE]

This module 0 is for those who are from non-technical background like Mechanical, BBA, MBA, B.Com, M.Com, etc.
Or for those who work in Non-IT sectors to get in-depth knowledge of programming and how to use it in Data Science.

1. Programming Basics & Environment Setup

Installing Anaconda ,Anaconda Basics and Introduction

Get familiar with version control, Git and GitHub.

Basic Github Commands.

Intro to Jupyter Notebook environment. Basics Jupyter notebook Commands.

Programming language basics.

2. Python Programming Overview

Python Overview

Python 2.7 vs Python 3

Writing your First Python Program

Lines and Indentation,Python

Identifiers

Various Operators and Operators

Precedence

Getting input from

User,Comments,Multi line

Comments.

3. Strings, Decisions And Loop Control

Working With Numbers, Booleans and Strings,String types and formatting, String operations

Simple if Statement, if-else Statement if-elif Statement.

Introduction to while Loops.

Introduction to for Loops,Using continue and break.

Class hands-on :

6 programs/coding exercise on string, loop and conditions in classroom

4. Python Data Types

List,Tuples,Dictionarys

Python Lists,Tuples,Dictionarys

Accessing Values,Basic Operations

Indexing, Slicing, and Matrixes

Built-in Functions & Methods

Exercises on List,Tuples And Dictionary

Class hands-on :

- Program to convert tuple to dictionary
- Remove Duplicate from Lists
- Python program to reverse a tuple
- Program to add all elements in list.
- + 3 more programs to be covered in class

5. Functions And Modules

Introduction To Functions – Why

Defining Functions

Calling Functions

Functions With Multiple Arguments.

Anonymous Functions - Lambda

Using Built-In Modules,User-Defined

Modules,Module Namespaces,

Iterators And Generators

Class hands-on :

8+ Programs to be covered in class from functions, Lambda, modules, Generators and Packages.

6. File I/O And Exceptional Handling and Regular Expression

Opening and Closing Files

open Function,file Object Attributes

close() Method ,Read,write,seek.

Exception Handling, try-finally Clause

Raising an Exceptions,User-Defined

Exceptions

Regular Expression- Search and Replace

Regular Expression Modifiers

Regular Expression Patterns,re module

Class hands-on :

10+ Programs to be covered in class from File IO,Reg-ex and exception handling.

7. Data Analysis Using Numpy And Pandas

Introduction to Numpy. Array

Creation, Printing Arrays, Basic Operation - Indexing, Slicing and Iterating, Shape Manipulation - Changing shape, stacking and splitting of array
Vector stacking, Broadcasting with Numpy, *Numpy for Statistical Operation.*

Pandas : Introduction to Pandas

Importing data into Python
Pandas Data Frames, Indexing Data Frames , Basic Operations With Data frame, Renaming Columns, Subsetting and filtering a data frame.

8. Data Visualisation using Python: Matplotlib and Seaborn

Matplotlib: Introduction, plot(), Controlling Line Properties, Subplot with Functional Method, Multiple Plot, Working with Multiple Figures, Histograms

Seaborn :

Intro to Seaborn And Visualizing statistical relationships , Import and Prepare data .Plotting with categorical data and Visualizing linear relationships
Seaborn Exercise

REAL TIME USE CASES IN PYTHON TO BE COVERED IN CLASS

- 3 Case Study on Numpy, Pandas , Matplotlib
- 1 Case Study on Pandas And Seaborn

PYTHON ASSIGNMENTS**Assignment 1 (Week 1):**

10 Coding exercises on Python Basics - Variables, Operators, Strings, Loops

Assignment 2 (Week 2):

10 Python Programs and practice set on List, Tuples , Dictionaries & matrices operations

Assignment 3 (Week 3):

10 Coding exercises on Functions, File And Regular Expression

Assignment 4 (Week 4):

15 Programs and Practice set Questions on Numpy and Pandas

Assignment 5 (Week 5):

2 Case Studies using Numpy Pandas and Matplotlib.

7. Data Analysis Using Numpy And Pandas

Introduction to Numpy. Array
Creation, Printing Arrays, Basic Operation -
Indexing, Slicing and Iterating, Shape
Manipulation - Changing shape, stacking and
splitting of array
Vector stacking, Broadcasting with Numpy,
Numpy for Statistical Operation.

Pandas : Introduction to Pandas
Importing data into Python
Pandas Data Frames, Indexing Data Frames
, Basic Operations With Data frame, Renaming
Columns, Subsetting and filtering a data frame.

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Matplotlib: Introduction, plot(), Controlling
Line Properties, Subplot with Functional
Method, Multiple Plot, Working with
Multiple Figures, Histograms

Seaborn :
Intro to Seaborn And Visualizing
statistical relationships , Import and
Prepare data .Plotting with categorical
data and Visualizing linear relationships
Seaborn Exercise

REAL TIME USE CASES IN PYTHON TO BE COVERED IN CLASS

- 3 Case Study on Numpy, Pandas , Matplotlib
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10 Coding exercises on Functions, File And Regular Expression

Assignment 4 (Week 4):

15 Programs and Practice set Questions on Numpy and Pandas

Assignment 5 (Week 5):

2 Case Studies using Numpy Pandas and Matplotlib.

Introduction To Machine Learning

What is Machine Learning?
What is the Challenge?
Introduction to Supervised Learning,
Introduction to Unsupervised Learning
What is Reinforcement Learning?
Machine Learning applications
Difference between Machine Learning and Deep Learning

1. Supervised Learning

Support Vector Machines
Linear regression
Logistic regression
Naive Bayes
Linear discriminant analysis
Decision tree
k-nearest neighbor algorithm
Neural Networks (Multilayer perceptron)
Similarity learning

2. Linear Regression

Introduction to Linear Regression
Linear Regression with Multiple Variables
Disadvantage of Linear Models
Interpretation of Model Outputs
Understanding Covariance and Colinearity
Understanding Heteroscedasticity

Case Study – Application of Linear Regression for Housing Price Prediction

3. Logistic Regression

Introduction to Logistic Regression.–
Why Logistic Regression .
Introduce the notion of classification
Cost function for logistic regression
Application of logistic regression to multi-class classification.
Confusion Matrix, Odd's Ratio And ROC Curve
Advantages And Disadvantages of Logistic Regression.

Case Study:To classify an email as spam or not spam using logistic Regression.

4. Decision Trees

Decision Tree – data set
How to build decision tree?
Understanding Kart Model
Classification Rules- Overfitting Problem
Stopping Criteria And Pruning
How to Find final size of Trees?
Model A decision Tree.
Naive Bayes
Random Forests and Support Vector Machines
Interpretation of Model Outputs

Case Study:

1 Business Case Study for Kart Model
2 Business Case Study for Random Forest
3 Business Case Study for SVM

5. Unsupervised Learning

Hierarchical Clustering
k-Means algorithm for clustering – groupings of unlabeled data points.
Principal Component Analysis(PCA)- Data
Independent components analysis(ICA)
Anomaly Detection
Recommender System-collaborative filtering algorithm

Case Study– Recommendation Engine for e-commerce/retail chain

6. Natural language Processing

Introduction to natural Language Processing(NLP).
Word Frequency Algorithms for NLP
Sentiment Analysis

Case Study :
Twitter data analysis using NLP

7. Introduction to Time Series Forecasting

Basics of Time Series Analysis and Forecasting ,Method Selection in Forecasting
Moving Average (MA) Forecast
Example,Different Components of Time Series Data ,Log Based Differencing, Linear Regression For Detrending

8. ARIMA and Multivariate Time Series Analysis

Introduction to ARIMA Models,ARIMA Model Calculations,Manual ARIMA Parameter Selection,ARIMA with Explanatory Variables
Understanding Multivariate Time Series and Their Structure,Checking for Stationarity and Differencing the MTS

Case Study : Performing Time Series Analysis on Stock Prices

IMPORTANT NOTE :

All Machine Learning Algorithms are covered in depth with Real time case studies for each Algorithm

Once 60% of ML is completed ,**Capstone Project will be released for the batch.**

1. RDBMS And SQL Operations :

Introduction To RDBMS
Single Table Queries - SELECT, WHERE, ORDER BY, Distinct, And, OR

Multiple Table Queries: INNER, SELF, CROSS, and OUTER, Join, Left Join, Right Join, Full Join, Union
Advance SQL Operations:
Data Aggregations and summarizing the data
Ranking Functions: Top-N Analysis
Advanced SQL Queries for Analytics

2. NoSQL Databases :

Topics - What is HBase?
HBase Architecture, HBase Components,
Storage Model of HBase,
HBase vs RDBMS
Introduction to Mongo DB, CRUD
Advantages of MongoDB over RDBMS
Use cases

3. Programming with SQL :

Mathematical Functions
Variables
Conditional Logic
Loops
Custom Functions
Grouping and Ordering
Partitioning
Filtering Data
Subqueries

4. MongoDB Overview :

Where MongoDB is used?
MongoDB Structures
MongoDB Shell vs MongoDB Server
Data Formats in MongoDB
MongoDB Aggregation Framework
Aggregating Documents
What are MongoDB Drivers?

5. Basics and CRUD Operation :

Databases, Collection & Documents
Shell & MongoDB drivers
What is JSON Data
Create, Read, Update, Delete
Finding, Deleting, Updating, Inserting Elements
Working with Arrays
Understanding Schemas and Relations

6. Introduction to MongoDB :

What is MongoDB?
Characteristics and Features
MongoDB Ecosystem
Installation process
Connecting to MongoDB database
Introduction to NoSQL
Introduction of MongoDB module
What are ObjectId in MongoDB

1. Introduction to Tableau :

Connecting to data source
 Creating dashboard pages
 How to create calculated columns
 Different charts
 Hands-on :
 Hands on on connecting data source
 and data cleansing
 Hands on various charts

2. Visual Analytics :

Getting Started With Visual Analytics
 Sorting and grouping
 Working with sets, set action
 Filters: Ways to filter, Interactive Filters
 Forecasting and Clustering
 Hands-on :
 Hands on deployment of Predictive
 model in visualization

3. Dashboard and Stories :

Working in Views with Dashboards
 and Stories
 Working with Sheets
 Fitting Sheets
 Legends and Quick Filters
 Tiled and Floating Layout
 Floating Objects

4. Mapping :

Coordinate points
 Plotting Latitude and Longitude
 Custom Geocoding
 Polygon Maps
 WMS and Background Image

5. Getting Started With Power BI :

Installing Power BI Desktop and
 Connecting to Data
 Overview of the Workflow in Power
 BI Desktop
 Introducing the Different Views of
 the Data Mode
 Query Editor Interface
 Working on Data Model

6. Programming with Power BI :

Working with Timeseries
 Understanding aggregation and
 granularity
 Filters and Slicers in Power BI
 Maps, Scatterplots and BI Reports
 Connecting Dataset with Power BI
 Creating a Customer Segmentation
 Dashboard
 Analyzing the Customer Segmentation
 Dashboard

1. Introduction To Hadoop :

Distributed Architecture - A Brief Overview
Understanding Big Data
Introduction To Hadoop, Hadoop Architecture
HDFS, Overview of MapReduce Framework
Hadoop Master – Slave Architecture
MapReduce Architecture
Use cases of MapReduce

2. Apache Spark Analytics :

What is Spark
Introduction to Spark RDD
Introduction to Spark SQL and Dataframes
Using R-Spark for machine learning
Hands-on:
installation and configuration of Spark

Using R-Spark for machine learning programming

3. Apache Spark Analytics :

Getting to know PySpark
Pyspark Introduction
Pyspark Environment Setup
pySpark - Spark context
RDD , Broadcast and Accumulator
Sparkconf and Sparkfiles
Spark MLlib Overview Algorithms and utilities in Spark Mlib

Hands-on:

Map reduce Use Case 1 : Youtube data analysis
Map reduce Use Case 2: Uber Data Analytics

Spark RDD programming

Hands-on:

Spark SQL and Dataframe programming

1. Introduction To R :

Installation Setup
Quick guide to RStudio User Interface
RStudio's GUI3
Changing the appearance in RStudio
Installing packages in R and using the library
Development Environment Overview
Introduction to R basics
Building blocks of R
Core programming principles
Fundamentals of R

2. Programming with R :

Creating an object
Data types in R
Coercion rules in R
Functions and arguments
Matrices
Data Frame
Data Inputs and Outputs with R
Vectors and Vector operation
Advanced Visualization
Using the script vs. using the console

3. Manipulating Data :

Data transformation with R - the Dplyr package - Part
Data transformation with R - the Dplyr package - Part
Sampling data with the Dplyr package
Using the pipe operator in R
Tidying data in R - gather() and separate()
Tidying data in R - unite() and spread()

4. Visualizing Data :

Intro to data visualization
Introduction to ggplot2
Building a histogram with ggplot2
Building a bar chart with ggplot2
Building a box and whiskers plot with ggplot2
Building a scatterplot with ggplot2

Deep Learning Libraries includes :



1. Introduction to Deep Learning And Tensor Flow

- Neural Network
- Understaing Neural Network Model
- Installing TensorFlow
- Simple Computation ,Contants And Variables
- Types of file formats in TensorFlow
- Creatting A Graph – Graph
- Visualization
- Creating a Model – Logistic Regression
- Model Building using tensor flow
- TensorFlow Classification Examples

2. Introduction to Tensor Flow

- Installing TensorFlow
- Simple Computation ,Contants And Variables
- Types of file formats in TensorFlow
- Creatting A Graph - Graph
- Visualization
- Creating a Model - Logistic Regression
- Model Building
- TensorFlow Classification Examples

3.. Understanding Neural Networks With Tensor Flow

- Basic Neural Network
- Single Hidden Layer Model
- Multiple Hidden Layer Model
- Backpropagation – Learning Algorithm
- and visual representation
- Understand Backpropagation – Using Neural
- Network Example
- TensorBoard
- Project on backpropagation

4. Convolutional Neural Network(CNN)

- Convolutional Layer Motivation
- Convolutional Layer Application
- Architecture of a CNN
- Pooling Layer Application
- Deep CNN
- Understanding and Visualizing a CNN
- Project : Building a CNN for Image Classification

5. Recurrent Neural Networks (RNN)

Introducing Recurrent Neural Networks
 skflow - RNNs in skflow
 Application use cases of RNN
 Manual Creation of RNN
 Long Short-Term memory (LSTM) And GRU theory
 Restricted Boltzmann Machine(RBM) And Autoencoders
 Collaborative Filtering with RBM
 Dimensionality Reduction with Linear Autoencoder
 Project : SPAM Prediction Using RNN

6. Understanding Of TFLearn APIs

Getting Started With TFLearn
 High-Level API usage -Layers, Built-in Operations, Training and Evaluation- Customizing the Training Process, Visualization APIs
 Sequential And Functional Composition
 Fine tuning,
 Using TensorBoard with TFLearn

Keras

8. Understanding Of Keras APIs

Understanding Keras API for implementing Neural Networks.
 Getting Started With Keras APIs
 Keras Model ,Sequential And Functional Model,shared layers,Composing a Model with
 Keras API
 Batch Normalization
 Tensor Board With Keras

PYTORCH

9. PyTorch Fundamentals

What is PyTorch ?
 Installing Pytorch
 Matrices , Torch to NumPy Bridge
 Numpy To Torch bridge ,Variables , Gradients
 PyTorch Autograd Module
 Linear Regression With PyTorch
 Logistic Regression With Pytorch
 Case Study : Image Classifier using PyTorch

PYTORCH

10. CNN and RNN With PyTorch

CNN in PyTorch
 Use PyTorch to build CNN
 Build RNN with PyTorch
 LSTM in PyTorch
 LSTM from CPU to GPU in PyTorch
 Case Study : Train a CNN model for classification

DEEP LEARNING PROJECTS

CAPSTONE PROJECT USING COMPUTER VISION AND DEEP LEARNING

1. Introduction to NLP & Text Analytics

Introduction to Text Analytics
Introduction to NLP
What is Natural Language Processing?
What Can Developers Use NLP
Algorithms For?
NLP Libraries
Need of Textual Analytics
Applications of Natural Language
Procession
Word Frequency Algorithms for NLP
Sentiment Analysis

2. Text Pre Processing Techniques

Need of Pre-Processing
Various methods to Process the Text
data
Tokenization ,Challenges in
Tokenization
Stopping ,Stop Word Removal
Stemming - Errors in Stemming
Types of Stemming Algorithms -
Table
lookup Approach ,N-Gram Stemmers

3. Distance Algorithms used in Text Analytics

string Similarity
Cosine Similarity Mechanism -
Similarity
between Two text documents
Levenshtein distance - measuring the
difference between two sequences
Applications of Levenshtein distance
LCS(Longest Common Sequence)
Problems
and solutions ,LCS Algorithms

4. Information Retrieval Systems

Information Retrieval -
Precision,Recall,F- score
TF-IDF
KNN for document retrieval
K-Means for document retrieval
Clustering for document retrieval

5. Topic Modelling & Dirichlett Distributions

Introduction to Topic Modelling
Latent Dirichlett Allocation
Adavanced Text Analytics & NLP
Introduction to Natural Language
Toolkit
POS Tagging
NER

6. Projects And Case Studies

a. Sentiment analysis for twitter, web
articles
b. Movie Review Prediction
c. Summarization of Restaurant
Reviews

1. Introduction to Computer Vision

Introduction to computer Vision
Computer Vision overview
Historical Perspective
Introduction to the four Rs of Computer Vision

2. Image Processing

Histogram equalization
Thresholding and Convolution
Sharpening and edge detection
Morphological transformations
Image pyramid

3. Image Classification and segmentation

Data Driven approach
K-nearest Neighbor
Linear Classification
Contours and segmentation
Contour properties
Circle detection
Line detection
Watershed segmentation

4. OpenCv Library

Opencv Installation And Python API
Drawing shapes ,Image Processing
Image Rotation and Thresholding
Image Filtering - Gaussian
Blur,Median Blur
Feature Detection - Canny Edge
Detector
Use of Neural Network in CV
Multi-Layer Perceptron

5. Object Detection(SSD)

Single Shot MultiBox Detector,
Object Localization
How would you find an object in an image?
The Problem of Scale and Shape
SSD in Tensorflow
Haarcascade - face and eye detection

PROJECT ON COMPUTER VISION AND OPENCV

AI BASED LIVE FACE
IDENTIFICATION SYSTEM FOR
CROWD

1. Introduction To GCP Cloud ML Engine

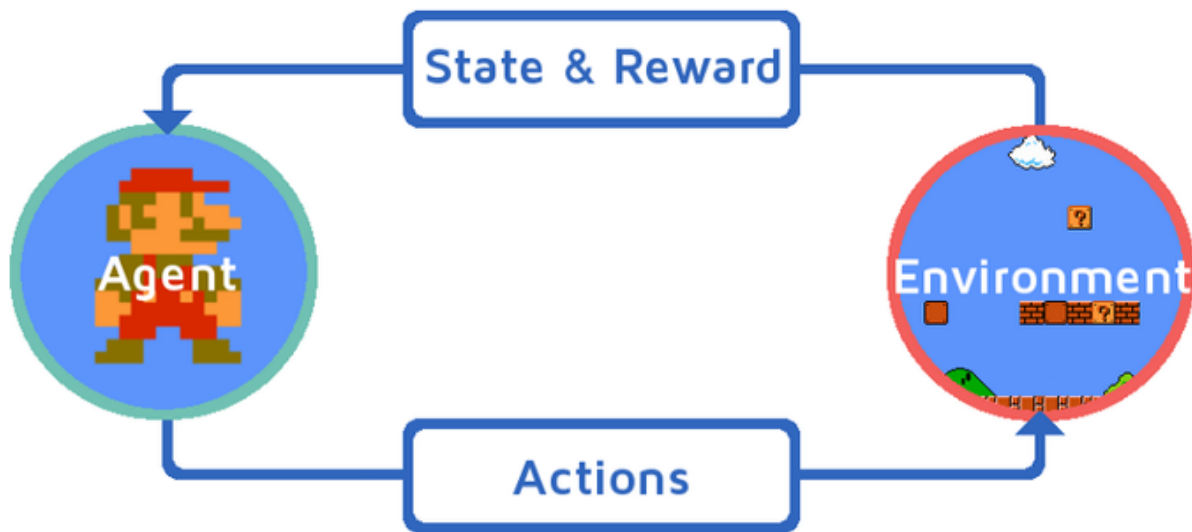
Introduction to Google CloudML Engine
CloudML Engine in Machine Learning WorkFlow
Components of Cloud ML Engine - **Google Cloud Platform Console**.
gcloud command-line tool and Rest API

2. Training Machine Learning Model

Developing a training application
Packaging a training application
Running and monitoring a training job
Using hyperparameter tuning
Using GPUs for training models in the cloud

3. Deploying Machine Learning Model

Deploying Models ,Understanding training graphs and serving graphs,
Check and adjust model size
Build an optimal prediction graph
Creating input function
creating a model version
Getting Online Prediction



1. Introduction Reinforcement Learning :

What is Reinforcement Learning - Basics
 Setting up Environment & Installing OpenAI Gym
 OpenAI Gym Basics . Terminology & Environment
 Dynamic Programming - Prediction, Control, and Value Approximation

2. OpenAI Gym and Basic RL Techniques: :

Building Blocks of Reinforcement Learning,
 OpenAI Gym Tutorial
 Random Search,
 Markov Decision Processes
 Monte Carlo Methods

3. Approximation Methods for Reinforcement Learning :

RBF Networks with CartPole
 TD Lambda and Policy Gradient Algorithms
Temporal difference learning
 N-Step Methods, TD lambda ,Policy Gradient Methods
 Policy Gradient in TensorFlow for CartPole
 Mountain Car Continuous using Tensorflow

4. Deep Q-Learning Intro :

Deep Q-Learning Techniques
 Deep Q-Learning in Tensorflow for CartPole

Projects and Case Studies :

Solving Taxi Environment
 Solving Frozen Lake Environment
 Reward Discounting

Real Time Industrial Projects

1

Domain - Face Detection

Project -

AI Based Live Face Identification System for Crowd

Artificial intelligence-based facial recognition systems for security purpose . Track down criminals in crowded place like malls ,airport and other crowded public places



3

Domain - Human Resource

Project -

IBM HR Analytics

Applying analytic processes to the human resource department of an organization in the hope of improving employee performance This is especially concerning if your business is customer facing, as customers often prefer to interact with familiar people.



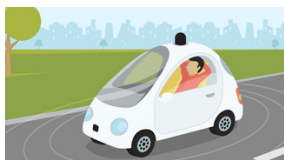
5

Domain - Automotive

Project-

Self-Driving Car

Simulate a Self-Driving Car with Convolution Neural Networks and Computer Vision. Here you will learn to use essential Computer Vision techniques to identify lane lines on a road



2

Domain - Healthcare

DataSet : Samsung

Project -

Analyzing Health Data and tracking human activity

The goal is to breakdown all the data that the Samsung Health app has collected and see what useful insights we can gain by analyzing it.

SAMSUNG

4

Domain - E-Commerce

Project -

Consumer Reviews of Amazon Products

The goal is to analyze Amazon's most successful consumer electronics product launches, discover insights into consumer reviews. What are the most reviewed Amazon products? How do the reviews in the first 90 days after a product launch?



6

Domain - Machine Learning

Project -

Emotions Sensor

Emotions Sensor Data Set Contain Top 23 730 English Words Classified Statistically Using Naive Bayes Algorithm Into 7 Basic Emotion Disgust, Surprise ,Neutral ,Anger ,Sad ,Happy and Fear.

To Detect Emotions In Text or Voice Speech to build a Sentiment Analysis Bot



Real Time Industrial Projects

7

Domain - Information Extraction

Project :

Natural Language Proccession

Training a machine learning model that classifies a given line of text as belonging to one of the books/Articles.

developing a machine learning model (deep learning preferred) for the same.



9

Domain - Voice Recognition

Project -

Speech Emotion Detection Model

Analyse audio samples .Building a CNN Model for Emotion Detection.Training and Testing the Model and Use **Trained CNN Model** on New Audio Samples



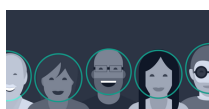
11

Domain - Sentiment Analysis

Project -

Detecting Smiles in your Camera App using CNN

This Project will detect whether an Image contains a Smile with High Accuracy. The goal is to extract high-level features by a well-designed deep convolutional networks (CNN)



8

Domain - Travel & Hospitality

Project - Airbnb New User Bookings

The goal is to predict which country a new user's first booking destination will be.

By accurately predicting where a new user will book their first travel experience, Airbnb can share more personalized content with their community, decrease the average time to first booking, and better forecast demand.



10

Domain - Retail

Project - Walmart Sales Forecasting

This dataset contains the sales for each department from the Walmart dataset containing data of 45 Walmart stores, selected holiday markdown events are also included These markdowns are known to affect sales, but it is challenging to predict which departments are affected and the extent of the impact.



12

Domain - Manufacturing

Project - Bosch Production Line Performance

To predict internal failures using thousands of measurements and tests made for each component along the assembly line. This would enable Bosch to bring quality products at lower costs to the end user.

The goal is to predict which parts will fail quality control



Real Time Industrial Projects

13

Domain - Demand/Supply

Project - Forecasting Uber Demand

The goal is to create an interactive dashboard using Tableau
This Tableau Dashboard can be used to get historical insights into a neighborhood,
For example,
see its upcoming forecasted demand,
increase the accuracy,
decrease surge pricing events.



14

Domain - Predictive Analytics

Project - Predicting Stock Prices Using LSTM

Trying to determine the future value of a company stock or other financial instrument traded on an exchange. Predict the Closing Stock Price of a given Company. Build and train **LSTM** model for Stock Price Prediction



15

Domain - Supply Chain

Project - Smart Supply Chain for Big Data Analysis

A DataSet of Supply Chains used by the company DataCo Global is used for the analysis. Dataset of Supply Chain, which allows the use of Machine Learning Algorithms and R Software.
It also allows the correlation of Structured Data with Unstructured Data for knowledge generation.



16

Domain - Machine Learning

Project - Generating Chatbot

In this project we will build a simple retrieval based chatbot based on NLTK library in python, to perform tasks such as automatic summarization, translation, named entity recognition, relationship extraction, sentiment analysis, speech recognition, and topic segmentation.



Watch the videos to
know more about
Projects :



HUMAN ACTIVITY



FRAUD DETECTION



CREDIT RISK ANALYSIS



RAPIDO PROJECT

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