# Learnbay

# Advance AI and ML
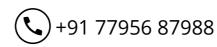## Certification Program

**175% Average Salary Hike**

**450+ Hiring Partners**

**Project Innovation Lab**

# CONTEXT

# About The Program

**2cr**
worth scholarships awarded

**600+**
professionals secured jobs after a career break

**35k+**
Trusted Learners

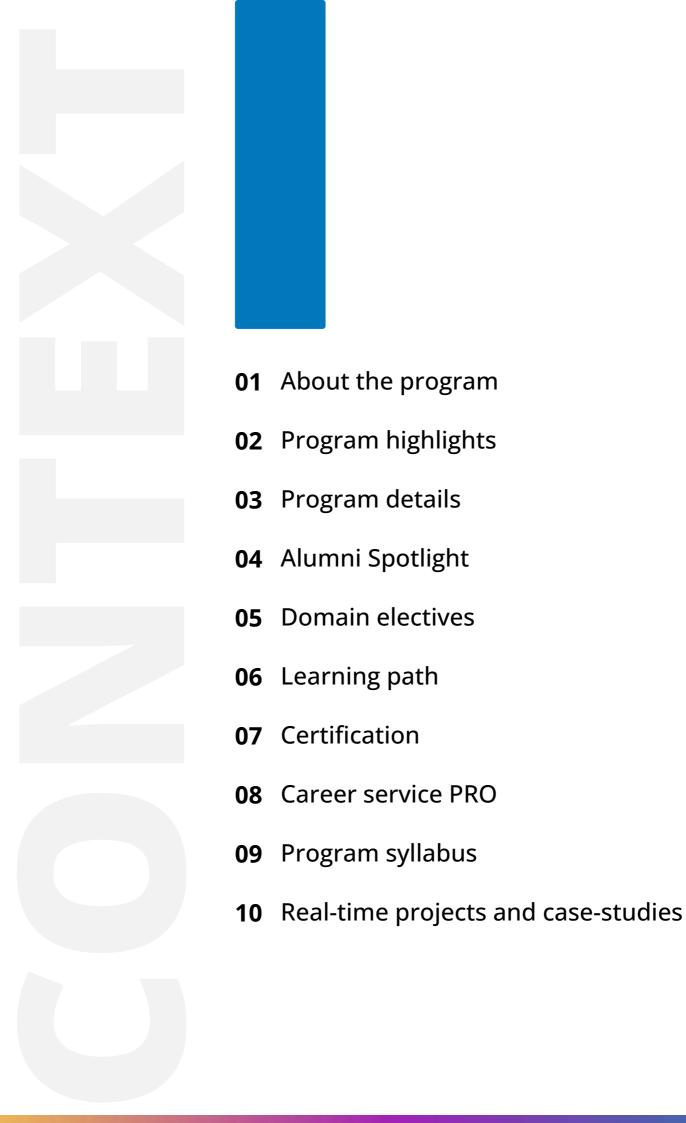Our Advance AI & ML Certification Program is designed for professionals who are seeking to gain hands-on experience using cutting-edge tools and techniques. Develop a deep understanding of AI algorithms, neural networks, and data analysis while mastering Python, TensorFlow, and scikit-learn. Our program empowers you with the skills and practical knowledge needed to excel in today's data-driven world. This program will elevate your career prospects and make you a sought-after AI and ML expert.

"

**We exist to provide accessible, reasonable, and industry-relevant education that empowers India's workforce to grow and develop.**

4.79/5          4.66/5          4.8/5          Great Place To Work Certified

# Program Highlights



## Industry-Relevant & Updated Syllabus

Learn the industry's latest tools, techniques & trends. Gain hands-on experience developing various apps.



## 360 Degree Knowledge Building

Develop practical skills through real-world projects and assignments



## 1:1 Dedicated Mentorship

Personalized learning experience from experienced industry professionals.



## Multiple Career Opportunities

Grow your career in data science and AI by targeting roles like data scientist, machine learning engineer, data architect, etc.

# Program Details

## COURSE PREREQUISITE

Prior knowledge of **programming/coding** is not mandatory. Just the urge to learn programming and basic ideas about advanced math is enough.

## PROGRAM ELIGIBILITY

- ✅ **Working professionals** having more than 1 year of experience in any technical domain

## KEY FEATURES

- ✅ Domain Electives ( BFSI, Retail, Supplychain, HR, Marketing, Healthcare )
- ✅ Dedicated Placement Cell | 100% Guaranteed Interview calls
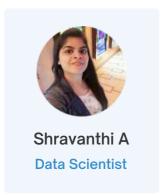- ✅ Globally Recognised **Certification from IBM & Microsoft**

## JOB ROLES TO TARGET

Get equppied with the industry relavant skills and aim for job roles like
Sr. Data Scientist, Machine Learning Engineer, AI Engineer, BI Developer,
Big Data Architect, Sr. Data Analyst etc.

Click below

**Check Eligibility**

# Alumni Spotlight

Learnbay has helped me a lot to learn data science applications in the e-commerce industry. The live class concept was really helpful in receiving proper DS training. Thanks to all my mentors and the placement team.

**Shravanthi A**
Data Scientist

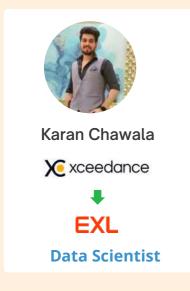| Mechanical Domain | ➡ | Data Scientist @ | Ford | 📈 **230%** Salary Hike |

The course structure is excellent with emphasis on concept building and tools & software at the same time. The support team is excellent and supportive and quite agile to respond to doubts.

**Preksha Mishra**
Lead Data Scientist

| Telecom Domain | ➡ | Data Scientist @ | HCL | 📈 **140%** Salary Hike |

**Karan Chawala**

XC xceedance

⬇

**EXL**

Data Scientist

**Jaya Sinha**

ADITYA BIRLA GROUP

⬇

Infosys

Senior Analyst

**Shubham Dev**

publicis sapient

⬇

brillio

Lead Data Analyst
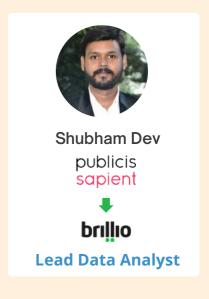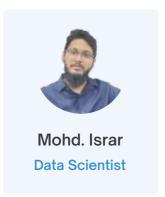
# Alumni Spotlight

Thanks to the Learnbay data science course & excellent guidance, I was able to ace the TCS interview and secure a job with a 210% pay raise. The real-world time projects helped me develop my concepts as a data scientist.

**Mohd. Israr**
Data Scientist

| Mechanical Domain | ➡ | Data Scientist @ tcs | 📈 **210%** Salary Hike |

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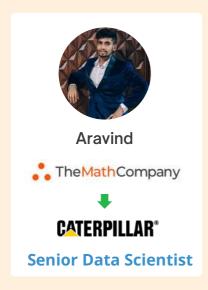
When I joined Learnbay I did not have any knowledge apart from the very basics. I gradually build my concept via various trainers and get trained in data science with strong knowledge/concepts.

**Saurabh Kumar**
Data Scientist

| Mathematics Professor | ➡ | Data Scientist @ Teleperformance | 📈 **135%** Salary Hike |

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**Aravind**

TheMathCompany
⬇
CATERPILLAR®

**Senior Data Scientist**

**Ritesh Kumar**

unacademy
⬇
Capgemini

**Data Scientist**

**Ramki**

cognizant
⬇
ANBSYSTEMS
energizing solutions

**Data Analyst**

# Learnbay's ProjectLab
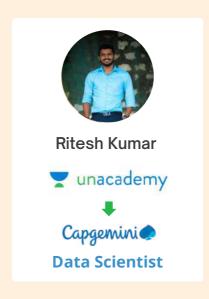
Choose Learnbay for your career journey because we're more than just a training provider. Our Project Innovation Lab lets you apply your skills in real-world scenarios. Get **dual certifications** for a competitive edge. Specialize in your desired domain. Discover how Learnbay can boost your career growth. Don't settle for less – choose Learnbay, your path to success!

## 1 Project Innovation Lab

Work in an industry like environment and gain practical hands-on experience of data scientist with dedicated mentors from industry.

## 2 Domain Electives

Enhance career prospects and excellence in your chosen field with our domain electives.

## 3 Dedicated Placement Cell

Experience 100% job assistance with guaranteed interview call from leading MNCs and startups globally.

## 4 Degree & Certification

Gain top-notch skills for a successful career through our degree and certification program

# Project Innovation Lab

Learnbay's Project Innovation Lab replicates industry like environment for real time projects. With our **ProjectLab,** you gain real proof of hands-on experience by having your project certified by the industry.

In our ProjectLab, you work like a data scientist with dedicated project mentors from industry and get certified on capstone project.
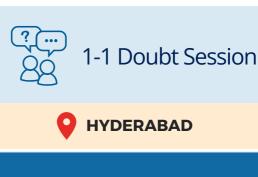
**450+**
Hiring Partners

📍 **PUNE**

**35k**
Trusted Learners

1-1 Doubt Session

📍 **HYDERABAD**

Capstone Project
Certificate from IBM

📍 **DELHI**

Project Innovation Labs Across India

📍 **BENGALURU**

# 2 Domain **Electives**

We offer Domain Electives for various industries including BFSI, Retail, Healthcare, Manufacturing, and Supply Chain. This ensures that you gain expertise directly relevant to your current domain.

With our program, you can make your past domain experience relevant and position yourself for a significant salary hike.

**(Select any two)**



## BFSI

Advanced analytics for risk assessment and fraud detection in finance.

**Brochure** ⤓



## Healthcare

Data-driven insights for improved patient care and medical research.

**Brochure** ⤓

## Manufacturing

Optimising operations with data analytics and predictive maintenance solutions.

**Brochure** ⤓

## Supplychain, E-com & Retail

Enhancing supply chain visibility and customer experience with data.

**Brochure** ⤓

## Sales, Marketing and HR Domain

Data science can help marketers tailor their efforts to suit individual needs and preferences.

**Brochure** ⤓

## Energy Oil and Gas

Data science can help the energy and utilities industry optimize the performance of critical assets.

**Brochure** ⬇

## Media, Hospitality & Transportation

help businesses improve personalization, implement dynamic pricing, and perform predictive maintenance

**Brochure** ⬇

# 3 Career Service

## Get 1 year of Job and Placement support
Unleash your career potential with 1 year of unlimited job access, interview support, and profile review.

## 3 Mock Interviews with Industry Experts
Master the art of data science & AI and stay ahead of the curve with mockups and industry insights

## Resume Building Session
Craft a powerful resume showcasing your expertise in software development to stand out from the competition

## 8-10 Interview Cell
Receive 8-10 interview calls from a diverse pool of interested employers/recruiters.

# 4

# Certificates

## IBM

### IBM Course Certificate

Complete your training with the globally recognized certificate.

## Microsoft

### Microsoft Course Certificate

Achieve professional growth & increase earning potential with Microsoft certification

## IBM
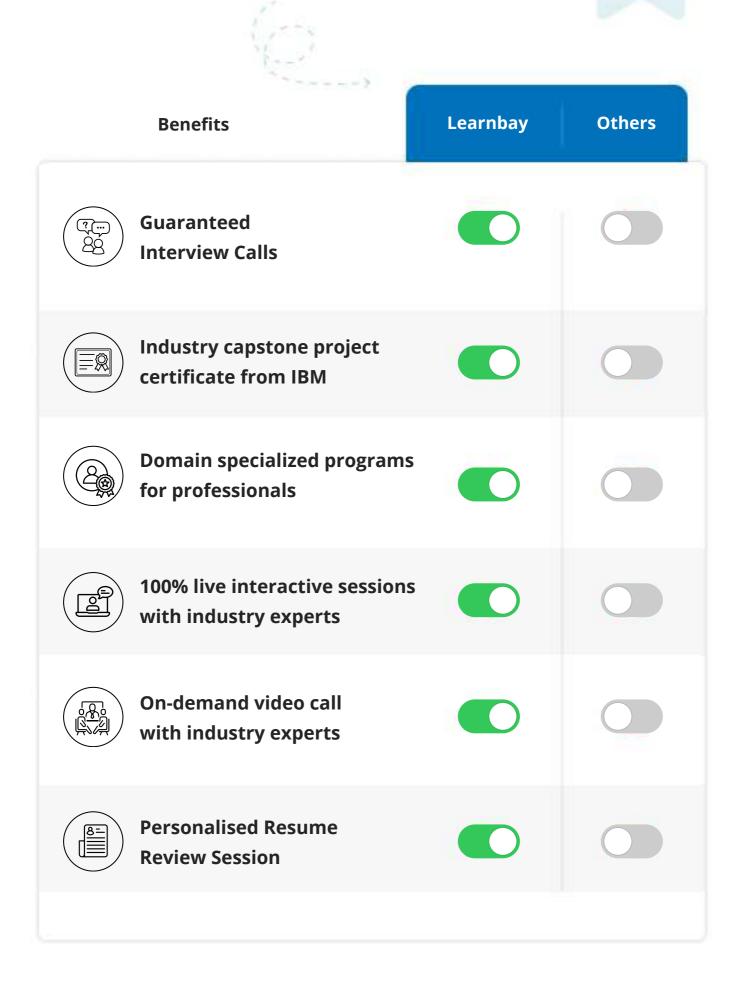
### IBM Capstone Project Certificate
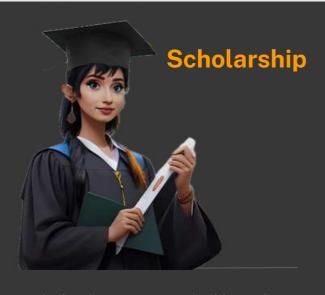
Highlight your skills & boost your project portfolio with capstone project certificate

# Others Vs Learnbay

| Benefits | Learnbay | Others |
|---|:---:|:---:|
| Guaranteed Interview Calls | ✅ | ⭕ |
| Industry capstone project certificate from IBM | ✅ | ⭕ |
| Domain specialized programs for professionals | ✅ | ⭕ |
| 100% live interactive sessions with industry experts | ✅ | ⭕ |
| On-demand video call with industry experts | ✅ | ⭕ |
| Personalised Resume Review Session | ✅ | ⭕ |

# Program Fee & Financing

## Scholarship

Scholarships are awarded based on profile review. Eligible candidates can avail upto 25% scholarship on desired courses. Click the button below to apply.

Click below

**Check Scholarship Eligibility**

## Financing as low as

### Rs.7,211/month

### No Cost EMI

**Razorpay**

**LIQUILOANS**

**Propelld**

**ShopSe**
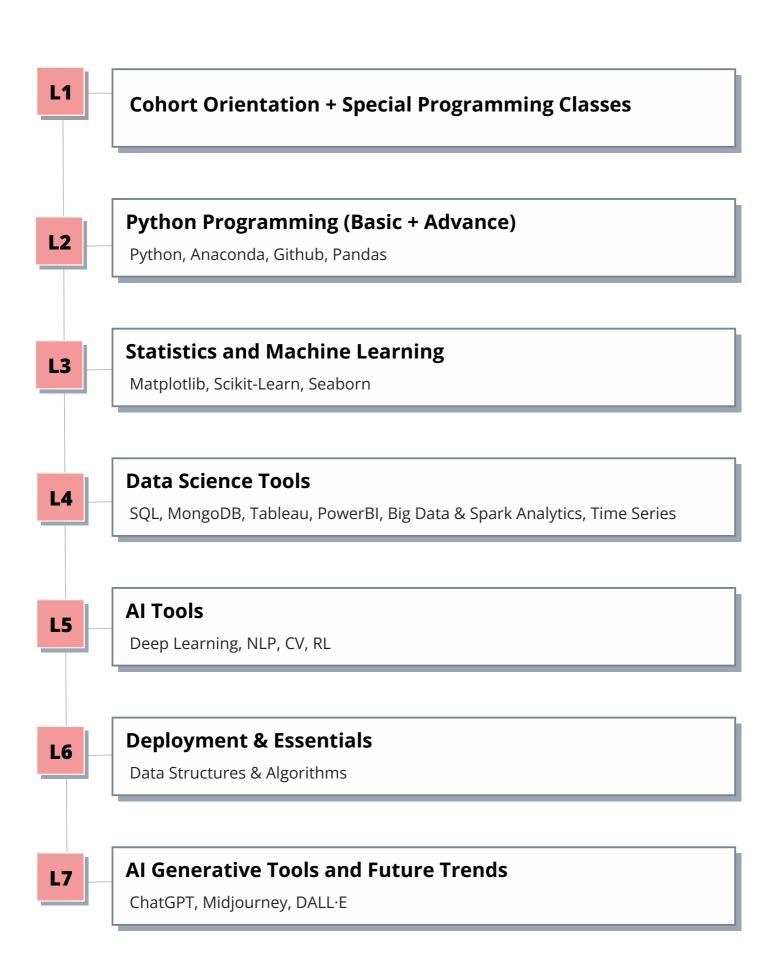
### Program Fee

Rs. 1,10,000/- +18% GST

# Learning Path

**L1** Cohort Orientation + Special Programming Classes

**L2** Python Programming (Basic + Advance)
Python, Anaconda, Github, Pandas

**L3** Statistics and Machine Learning
Matplotlib, Scikit-Learn, Seaborn

**L4** Data Science Tools
SQL, MongoDB, Tableau, PowerBI, Big Data & Spark Analytics, Time Series

**L5** AI Tools
Deep Learning, NLP, CV, RL

**L6** Deployment & Essentials
Data Structures & Algorithms

**L7** AI Generative Tools and Future Trends
ChatGPT, Midjourney, DALL·E

# Program Syllabus

## Preparatory Session   08 Hours

### Cohort Orientation

- A brief introduction to tools related to data
- Learn about particular real-time projects and Capstone projects
- Data and its impact on career opportunities
- Utilizing data, to enhance industrial operations and management

### Fundamentals of Programming

- Introduction to Anaconda & Jupyter notebook
- Flavors of python
- Introduction to Git, GitHub
- Python Fundamentals

**Tools covered** | python | ANACONDA. | jupyter | GitHub

### Fundamentals of Statistics

- Mean, Median, Mode
- Standard Deviation, Average. Probability, Permutations, and Combinations
- Introduction to Linear Algebra

**Note:**

*This session is specially designed for non- programmers to understand basics of computer programming and math.*

*Those who wish to brush up their programming skills can also attend this session.*

# Program Syllabus

## Python programming — 40 Hours

### Basic Python

- Programming Basics & Environment Setup
- Strings, Decisions & Loop Control
- Python Data Types
- Functions And Modules
- File I/O An d Exceptional Handling and Regular Expression

*Class Hands-on:*

*6 programs/coding exercise on string, loop and conditions*

*8+ Programs to be covered in class of functions, Lambda, modules, Generators and Packages*

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

**Tools covered** | NumPy | pandas | matplotlib | seaborn

### Advance Python

- Data Analysis Using Numpy
- Data Analysis Using Pandas
- Data Visualization using Matplotlib
- Data Visualization using Seaborn

*Includes coding challenges & assessment*

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

**Real time project will be covered after Python completion with 2 hours of assessment (coding and objective questions)**

# Program Syllabus

## Statistics and Machine Learning — 70 Hours

### Statistics

- Fundamentals of Math and Probability
- All about Population & Sample
- Statistical Thinking
- Descriptive & Inferential Statistics
- Hypothesis Testing
- Linear Algebra
- Data Processing & Exploratory Data Analysis

**Hands-on:**

*Problem solving for C.L.T Problem solving Hypothesis Testing Problem solving for T-test, Z-score test Case study and model run for ANOVA, ANCOVA*

### Machine Learning

- Data Preprocessing
- Logistic Regression Model
- Evaluation Metrics for Classification model
- K Nearest Neighbours Model
- Decision Tree Model
- Random Forest Model
- Hyperparameter Tuning
- Naive Baye's Model
- K Means and Hierarchical Clustering
- Hierarchical Clustering
- Principal Component Analysis(PCA)
- Support Vector Machine(SVM)

**Case studies:**

- To classify an email as spam or not spam using logistic Regression
- Application of Linear Regression for Housing Price Prediction
- Recommendation Engine for e-commerce/retail chain
- Twitter data analysis using NLP

*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.***

# Program Syllabus

## Big Data Analytics and Visualization — 86 Hours

### SQL

- SQL and RDBMS
- NoSQL, HBase & MongoDB
- JSON Data & CRUD
- Programming with SQL

**Assignments**
- Working with multiple tables
- Practice Joins, Grouping and Subqueries
- Using GROUP BY and HAVING Clauses
- Practice Aggregation Queries

### MongoDB

- MongoDB Ecosystem
- MongoDB Structures
- MongoDB Shell vs MongoDB Server
- Data Formats in MongoDB
- Working with MongoDB Compass
- Working with Numeric Data
- Working on Scheme Designing

**Assignment**

Obtain the data in the format you want by formulating queries that are both effective and high-performing.

*Projects are the culmination of your learning journey, where you will tackle real data-related problems.*

### Tableau

- Dashboard and Stories
- Visual Analytics
- Custom Geocoding
- Polygon Maps
- WMS and Background Image

**Assignment**
- Connecting data source and data cleansing
- Working with various charts
- Deployment of Predictive model in visualization

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# Program Syllabus

## Big Data Analytics and Visualization — 86 Hours

### PowerBI

- Overview of the Workflow in Power BI Desktop
- Introducing the Different Views of the Data Mode
- Working with Time Series
- Scatterplots and BI Reports
- Connecting Dataset with Power BI

**Assignments**
- Create Bar charts
- Create Pie charts
- Create Tree maps
- Create Donut Charts
- Create Waterfall Diagrams
- Creating Table Calculations for Gender

### Sparks Analytics

- Introduction To Hadoop & Big Data
- Hadoop Master: Slave Architecture
- MapReduce Architecture
- Introduction to Spark SQL and Data frames
- Using R-Spark for machine learning

**Hands-on**
- Map reduce Use Case 1: Youtube data analysis
- Map reduce Use Case 2: Uber data analytics
- Spark RDD programming
- Spark SQL and Data frame programming

**Tools covered**



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# Program **Syllabus**

**Big Data Analytics and Visualization**    **86 Hours**

## Time Series

- Basics of Time Series Analysis and Forecasting
- Method Selection in Forecasting
- Moving Average (MA) Forecast
- Different Components of Time Series Data
- Log Based Differencing, Linear Regression for Detrending
- ARIMA Model Calculations, Manual ARIMA Parameter Selection
- ARIMA with Explanatory Variables
- Understanding Multivariate Time Series and their Structure

### Assignment
- Time series classification of smartphone data to predict user behavior
- Performing Time Series Analysis on Stock Prices
- Time series forecasting of sales data

As Term 3 concludes, the following phase will involve an extensive exploration of all modules. This will be complemented by practical examples, demanding assignments, and culminating with your Capstone Projects.

This approach aims to enhance your understanding and real-world application of the modules.

**Download Detailed Curriculum** ⬇

# Program **Syllabus**

## Advance AI    144 Hours

### Deep Learning using TensorFlow

- Neural Network
- Simple Computation, Constants, and Variables
- Back-propagation – Learning Algorithm and visual representation
- TensorBoard
- Convolutional Neural Network (CNN)
- Deep CNN
- Introducing Recurrent Neural Networks skflow: RNNs in skflow
- Understanding Of TFLearn APIs
- Understanding Keras API for implementing Neural Networks

#### Project
- Building a CNN for Image Classification
- Project on backpropagation using Neural Networks with Tensor Flow
- SPAM Prediction using RNN
- Image Classifier using PyTorch

### Natural Language Processing

- Text Analysis
- Text Pre Processing Techniques
- Levenshtein distance - measuring the difference between two sequences
- Problems and solutions, LCS Algorithms
- Information Retrieval - Precision, Recall,F- score TF-IDF

#### Use cases on NLP
- Sentiment analysis for marketing
- Toxic comments classification
- Language identification
- Generating research papers titles
- Application to translate and summarize the news
- RESTful API for similarity check

Includes coding challenges & assessment

# Program **Syllabus**

## Advance AI    144 Hours

### Computer Vision

- Image Filtering
- Image Processing
- Image Classification and segmentation

**Projects**
- Single Shot MultiBox Detector,
- Object Localization
  Find an object in an image

**Real-time Use Cases**
- Single Shot MultiBox Detector
- Object Localization
- How would you find an object in an image
- The Problem of Scale and Shape SSD in Tensorflow
- Haar cascade - face and eye detection

### Reinforcement Learning

- OpenAI Gym Basics
- Dynamic Programming - Prediction, Control, and Value Approximation
- Approximation Methods for Reinforcement Learning

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

- Solving Taxi Environment
- Solving Frozen Lake Environment
- Reward Discounting

### Deployment AWS+Azure

- Data Preparation and Feature Engineering
- Model Training and Evaluation
- Model Deployment and Management
- Advanced Topics in Machine Learning on AWS and Azure

# Program Syllabus

## Essentials  40 Hours

### DSA

- Array Overview
- String
- Linked List
- Queue
- Stack
- Heap
- Trie
- Tree, Binary Search Tree and AVL Tree
- Segment Tree
- Graph & Recursion
- Introduction to recursion
- Backtracking Algorithm
- Searching
- Sorting
- Greedy Algorithm
- Pattern Searching
- Dynamic Programming

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# Program **Syllabus**

## AI Generative Tools and Future Trends

### Emerging Trends in AI and Generative Modeling

- Exploring other AI generative tools beyond ChatGPT and DALL·E
- Overview of Midjourney
- Discussion on future trends and advancements in AI generative tools
- Open-ended project and/or presentation on a selected topic, incorporating learned concepts

### Natural Language Processing and ChatGPT

- Introduction to natural language processing techniques
- Understanding ChatGPT and its architecture
  Hands-on exercises using ChatGPT for text generation
- Fine-tuning ChatGPT for specific applications



### DALL·E: Image Generation with AI

  Exploring image generation using DALL·E
- Hands-on exercises for creating unique images with DALL·E
- Ethical considerations and limitations of AI-generated images

### Graph Neural Networks (GNN) for Data Analysis

- Overview of Graph Neural Networks (GNN) and their applications
- Hands-on exercises using GNN for tasks such as node classification and link prediction
- Case studies on real-world applications of GNN in data science

# Program Syllabus

## Python Bootcamp for AI

- Python Essentials: Syntax, Data Types, and Variables
- Flow Control: Conditionals and Loops

## Build Your Interview Assistant

- Project Overview: Interview Automation Bot
- Components & Architecture
- Natural Language Models (LLMs): Introduction and Uses

## Large Language Models (LLM

- Historical Overview of NLP: From Rule-Based Systems to Machine Learning.
- Evolution of Neural Network Architectures in NLP.

## Visual AI for eCommerce

- Introduction: Digital Transformation for Offline Businesses
- Multimodal Models: DALL-E and Beyond
- Style & Photography Principles for Visual AI

## Intelligent News Aggregator

- Project Outline: Personalized News Recommendation
- GPT-3 & Copilot for Code Automation

# Program Syllabus

## Customer Support Bot - HelpMate Pro

- Project Introduction and Components
- Embeddings vs Fine-Tuning: When and How
- Semantic Search in Customer Service

## Knowledge Discovery Bot

- Project Overview and Architecture
- LangChain Tools and Concepts

## Azure OpenAI Integration

- OpenAI on Azure: Services and Scalability
- Revisiting HelpMate Pro: Scaling Strategy

## The Future & Ethics of Generative AI

- Responsible AI: Bias and Fairness
- Future Trends: Multimodal Models and RLHF
- Closing Remarks
- Assessment: MCQ

## Capstone Project (3 Weeks)

- Building an Integrated Prompt Engineering Solution
- Project Submission and Peer Review

# Real-time Projects

## J.P.Morgan

**12 hours**

### Learn and develop classification techniques for the digital transformation of banking

JPMorgan offers tax-friendly insurance choices. You can help them forecast insurance premiums. Targeted marketing using your Random Forest Algorithm skills can help obtain better premium values.

python   pandas   scikit learn

## NETFLIX

**17 hours**

### Building a content recommendation model on the basis of regional viewer categorization

Netflix is a global entertainment video streaming site. They offer content in various regional languages. Build a local recommendation engine for Netflix customers residing in south Bangalore on their weekend and weekday activities, utilizing NLP.

NumPy   SQL   Jupyter

## OLA

**18 hours**

### Reduction of waiting time via a highly precise forecasting model

Make a demand forecasting model based on specific time period rider demands. Such a model will help both riders and cab drivers to ensure the least possible waiting time. You can include measures like latitude and longitude identification.

python   TensorFlow   Spark

## saudi aramco

**14 hours**

### Understanding in-depth about logging while drilling (LWD) technique

Saudi Aramco company is working on the development of high-efficiency drilling models. Use the bright sides of big data analytics to identify the most cost-effective and highly productive drilling sites.

hadoop   matplotlib   aws

# Real-time Projects

## Career progression planning of employees with workforce defections and efficiency

**19 hours**

IBM intends to boost its HR department by identifying employees' masked inconsistency. They need models to identify the graphical variations in their 14000+ employees' performances. Help them build models with your regressions and other ML abilities.

*python* *pandas* *scikit learn*

## Descriptive study of trends and irregularities with prediction analysis for conversion

**21 hours**

Swiggy seeks a broad marketing campaign. But they need automated keyword generation tools & proper message preparation and delivery of the same to the right audience at the right time. Help them with text analytics and NLP-based keyword research.

*TensorFlow* *SQL* *Jupyter*

## Forecasting future sales with trends and price maximization

**17 hours**

BMW customers can sell old vehicles, but rivals provide superior resale prices. BMW's data science-powered software will deliver the greatest market value for used vehicles based on Km travelled, daily price changes, production dates, etc. Such tasks build analytical abilities.

*Keras* *GitHub* *scikit learn*

## Understanding covid-19 cases and fatality rate by time series forecasting

**13 hours**

Samsung will launch a new healthcare app soon. The key goal of this app is an accurate human activity tracking and providing relevant health-related recommendations. Continuous analysis of a massive amount of mobile data is required for such an app.

*python* *matplotlib* *Azure*

# Real-time Projects

## Churn forecasting for the telecom industry using Python programming with Machine Learning

**10 hours**

The goal of this project is to design a precise customer churn prediction model. Based on the same, Jio can identify the exact reason for customer dissatisfaction and work accordingly.

*Technologies: ggplot2, git, XGBoost*

## Recommendation system with Customer Lifetime Value (CLV) analysis

**18 hours**

Amazon wants to find the most successful electronics. Live consumer reviews are needed. Using data visualisation, help regenerate consumer insights from ongoing and current reviews.

*Technologies: python, SQL, Jupyter*

## Condition-based preventative maintenance and fault prediction in depth

**20 hours**

This project helped BOSCH to predict their internal failures by production line dataset analysis. But still, they are struggling to predict automated faults in their assembly stage. Help them by building more advanced predictive models for assembly stage monitoring.
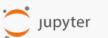
*Technologies: python, TensorFlow, scikit learn*

## Automated inventory monitoring for supportable supply chain management

**15 hours**

An automated inventory management system will keep track of stock levels and upcoming orders. In addition, you can contribute to DataCo's intelligent supply chain software generation project by using ML algorithms and Python programming skills.

*Technologies: Jupyter, NumPy, pandas*

# Contact Us

Click here to whatsapp

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