The IoT Academy
Connecting The Unconnected

Data Analytics, Machine Learning & Generative AI Certification Course

Duration: 6 Months (200+ Hours)

BROCHURE

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ABOUT
THE IOT ACADEMY

The IoT Academy, established in 2017 is a fast emerging company imparting quality programs for skills training, internship and guidance in cutting edge technologies like Data Science, Machine Learning, Artificial Intelligence, Internet of Things, Embedded Systems & many more and focused on helping people develop the skills they need to thrive in the rapidly growing digital economy.

The IoT Academy has collaborated with various premier institutes e.g. EICT Academy, IIT-Guwahati, IIT-Roorkee and IIT-Kanpur for Advance Certification courses to takeprovide outcome-centric solutions to help them achieve their professional goals

YOU
DREAM IT
and We Make It Happen

OUR
ACADEMIC PARTNERS

- E&ICT Academy IIT Guwahati
- E&ICT Academy IIT Roorkee
- E&ICT Academy IIT Kanpur
- IIT Jodhpur
- E&ICT Academy NIT Patna
- RFRF Foundation
- ASTU Guwahati
- IIT Bhilai
- Himachal Pradesh University
- ABESEC College
- MSIT College
- IPEC College

ABOUT
THE PROGRAM

Many recent technological advancements around you incorporate elements of Data Science, Machine Learning, and Artificial Intelligence.

This comprehensive self paced program in Data Analytics, Machine Learning, and Generative AI provides an integrated learning experience for individuals looking to master these key areas of technology.

The course typically covers essential data analytics techniques, including data collection, preprocessing, and visualization, followed by an in-depth exploration of machine learning algorithms such as supervised, unsupervised, and reinforcement learning.

It introduces students to statistical modeling and regression analysis ensuring they understand how to create predictive models and extract insights from large datasets.

A significant focus is also placed on Generative AI, with topics covering prompt engineering, explainable AI and the practical application of AI for content creation, such as text, image, and video generation.

The program blends theory with hands-on projects to equip students with both the technical knowledge and practical skills required to tackle real-world problems in the fields of data science and artificial intelligence.

Duration

Total Duration of This Program is **6 Months.**

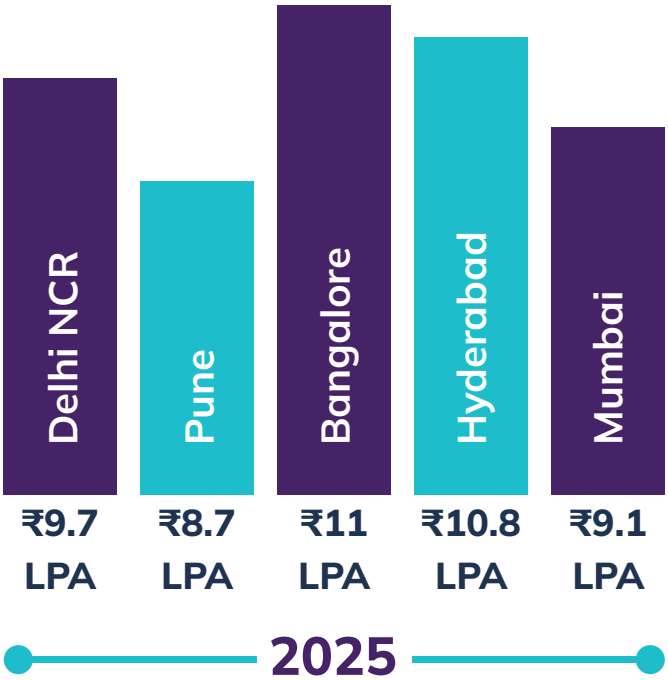
Eligibility

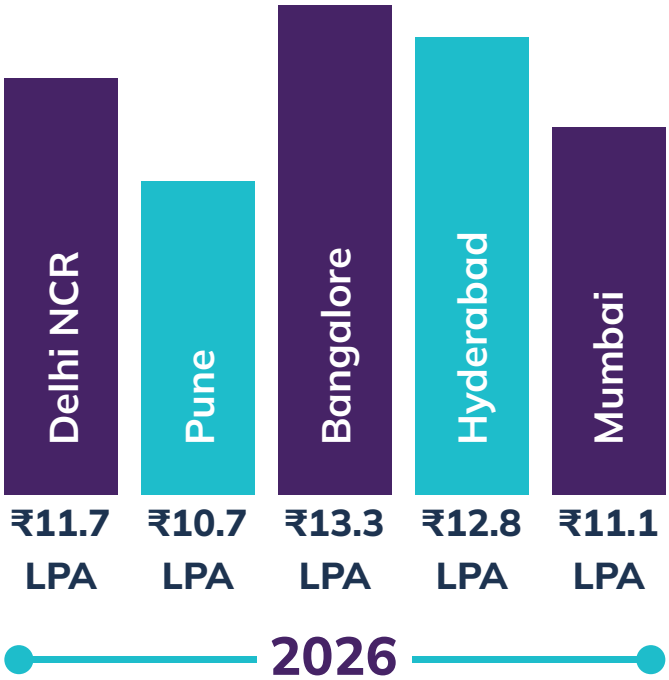
- Graduate or Graduation Appearing.
- Non-Technical Can Also Apply.

Who is it Ideal for?

- Business Professionals who want to make data-driven decisions.
- Recent Graduates seeking to start a career in data analytics or machine learning.
- Career Changers interested in transitioning to the rapidly growing fields of data science, analytics, and AI.
- Data Analysts looking to advance their skills.

CURRENT
SALARY AND SCOPE





PROGRAM HIGHLIGHT

200+ hours of in-depth training including one-to-one live doubt sessions.

Master essential tools like Tableau, Power BI, Python, R, NumPy, Pandas, ChatGPT, Gemini, and more.

Work on **Real-time Projects** where machine learning and AI is used.

Get dedicated mentor for **1:1** live doubt clearing session

Gain skills in Python, recommendation systems, ML, time series forecasting, and other **cutting-edge techniques.**

Guaranteed **1.5 months internship** with industry leaders & get 100% placement assistance.

WHY YOU SHOULD CHOOSE DATA ANALYTICS, MACHINE LEARNING & GENERATIVE AI AS A CAREER OPTION?

1. High Demand : Companies across industries need professionals in these fields, leading to abundant job opportunities.

2. Wide Applications : Used in decision-making, predictive analytics, content creation, and automation.

3. High Salary : These roles offer competitive salaries due to high demand and specialized skill sets.

4. Innovative Work : Cutting-edge technologies provide exciting, dynamic projects.

5. Continuous Learning : Constant advancements ensure career growth through upskilling.

6. Cross-Industry Flexibility : Skills are applicable across various industries, offering flexibility.

7. Business Value : Critical for optimizing processes, improving decisions, and driving innovation.

8. Global Opportunities : Remote work and global job prospects make these fields flexible.

COURSE CURRICULUM

Data Analytics, Data Science & Visualization with Python

Module 1: Python Basics

- What is Python
- Application of Python
- Why use Python for AI-ML
- Installation Anaconda/Other Idle
- Python Tokens
- Data Types in Python
- Conditional Statement
- Loops in Python
- Functions in Python
- Advance Functions
- File Handling

Module 2: Python NumPy & Pandas

- Introduction to NumPy
- Exploring a NumPy Array
- Indexing & Slicing a NumPy Array
- Manipulating a NumPy Array
- Performing Mathematical & Statistical
- Functions using NumPy
- Performing Linear Algebra Operations using NumPy
- Introduction to Pandas
- Exploring Pandas Series
- Introduction to Pandas DataFrame
- Importing & Exporting Data
- Implementing basic DataFrame functionalities
- Exploring Descriptive Statistics with Pandas

Module 3: R Language Essentials

- Fundamentals of R
- Vectors & control statements
- Functions in R
- Matrices & strings
- Lists & arrays in R
- Data visualization in R

Module 4: EDA

- Data Types
- Dispersion & Skewness
- Data imputation
- Data Pre-processing
- Data Cleaning
- Data Manipulation
- Advanced Manipulation

Module 05: SQL For Data Analytics

- SQL Basic
- SQL Joins
- SQL Aggregations
- Subqueries and Temp Tables
- SQL Data Cleaning
- Window Functions

COURSE CURRICULUM

Module 6: Data Visualization

- Why Data Visualization?
- Introduction to Data Visualization
- Libraries & Tools for Data Visualization in Python
- Static Data Visualization Using Seaborn
- Interactive Data Visualization Using Plotly Express
- Interactive Animations & Facet Plots

Module 7: Python NumPy & Pandas

- Understanding Data
- Creating Your First visualization
- Tableau Calculations
- Formatting Visualizations
- Manipulating Data in Tableau
- Creating Dashboards AND Stories
- Distributing & Publishing Your Visualization

Module 8: Visual Storytelling using Power BI

- Understanding Data
- Creating Your First visualization
- Tableau Calculations
- Formatting Visualizations
- Manipulating Data in Tableau
- Creating Dashboards AND Stories
- Distributing & Publishing Your Visualization

Capstone Project 1

COURSE CURRICULUM

Applied Maths, Statistics and Probability for DS & ML

Module 1: Mathematics for Machine Learning

- Linear Algebra
- Introduction to Calculus
- Multivariable Calculus

Module 2: Statistical Foundations

- Applications of Statistics
- Introduction to Statistics
- Categories of Data
- Basic Terminologies in Statistics
- Sampling techniques
- Descriptive Statistics
- Measure Used in Descriptive Statistics
- Z-Scores

Module 3: Probability

- What is Probability?
- Rules of probability
- Types of Probability
- Random Variables
- Probability Distribution Functions

Module 4: Inferential Statistics

- Introduction to Inferential Statistics
- Hypothesis Testing
- Normal Distribution
- P-value
- One-tailed and Two-tailed tests
- One Sample Z test
- One Sample T test
- Independent Sample T test
- Chi-square test
- ANOVA

Capstone Project 2

COURSE CURRICULUM

Machine Learning Specialization

Module 1: Introduction to Machine Learning

- What is Machine Learning?
- Applications of Machine Learning
- Machine Learning in your daily life
- Machine Learning in Retail
- Steps Involved in Machine Learning

Module 2: Regression

- Introduction to Regression
- Linear Regression
- Evaluation Metrics in Regression Models
- Logistic Regression

Module 3: Unsupervised Learning

- What is Unsupervised Learning?
- Application of Unsupervised Learning
- Introduction to Clustering
- Types of Clustering
- Partitioning Methods: K-means,
- DBSCAN, Spectral
- Hierarchical Methods: Hierarchical

Capstone Project 3

Module 4: Supervised Classification

- Why Use Classification?
- Application of Classification Algorithms
- Introduction to Classification
- Types of Classification Algorithms
- Classification: Decision Tree
- Classification: Random Forest
- ML in Banking & Finance - Benefits
- Classification: SVM
- Classification: KNN
- Classification: Naïve Bayes
- Evaluating Classification Models
- Model Optimization Techniques
- Model Boosting Techniques
- Introduction to PyCaret
- Dealing with Unbalanced Datasets

Module 5: Dimension Reduction

- PCA
- Factor Analysis
- LDA

Module 6: Association Rules Mining

- What are Association Rules?
- Association Rule Parameters
- A-priori Algorithm
- Market Basket Analysis

COURSE CURRICULUM

Module 7: Time-series Forecasting

- Introduction to forecasting data
- Properties of Time Series data
- Features of Time Series data
- Markov Processes - Overview and
- Terminologies
- Naive, Average and Moving Average
- Forecasting
- Exponential Smoothing
- ARIMA Approach

Module 8: Recommendation System

- What is a Recommendation System?
- Need for a Recommendation System
- Recommendation System Use Cases
- Applications of Recommendation System
- Types of Recommendation Systems
- Collaborative Filtering
- Content Based Filtering
- Matrix Factorization
- Pros and Cons of Collaborative Filtering
- Content Based Filtering
- Hybrid Recommendation Systems

Module 9: Machine Learning Model Deployment

- Overview of Machine Learning Models
- Machine Learning System Architecture
- Research Environment
- Packaging, Serving and Deploying the model
- Differential Testing

Capstone Project 4

COURSE CURRICULUM

Generative AI Specialization & ChatGPT, Prompt Engineering, Explainable AI

Module 1: Generative AI Specialization

- Introduction to Generative AI Models
- The Future of Generative AI
- Types of Generative AI Models
- Ethical Considerations in Generative
- AI Models & ChatGPT
- Popular Generative AI Models
- Benchmarking & Evaluating Models

Module 2: ChatGPT, Prompt Engineering, Explainable AI

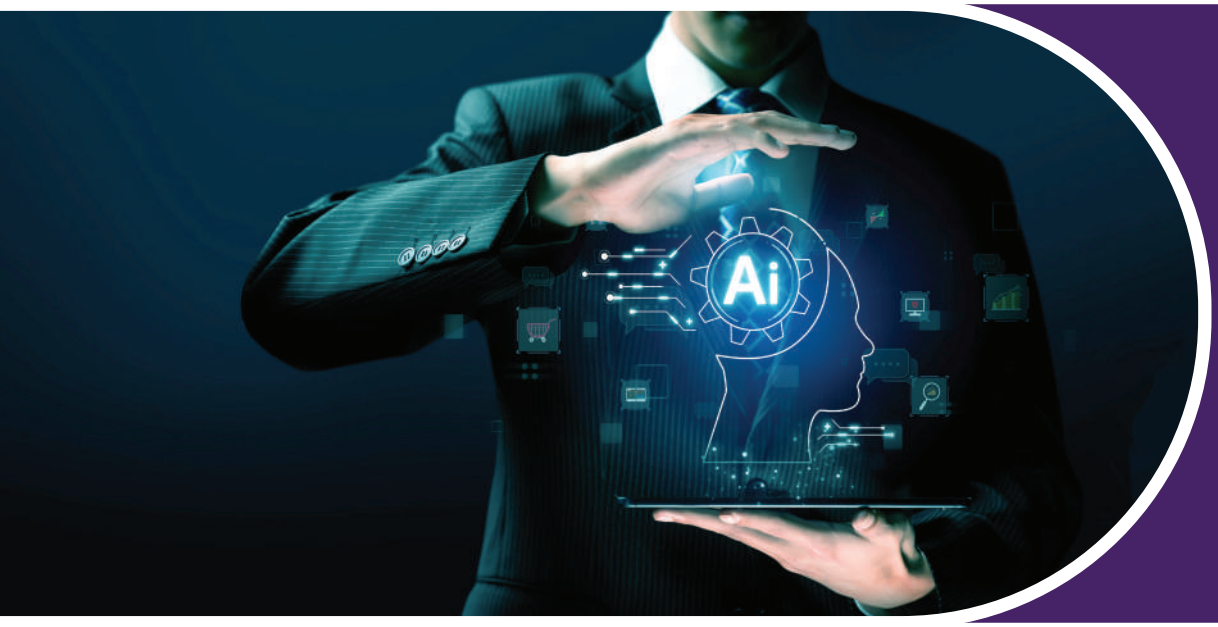
- ChatGPT
- Fine-tuning ChatGPT
- Deploying and Scaling ChatGPT
- Maintaining ChatGPT
- Security and Privacy Considerations
- Monitoring and Debugging ChatGPT

Explainable AI

Prompt Engineering

Advanced Prompt Engineering Techniques

Major Capstone Project



TOOLS
& TECHNOLOGIES


SKILLS
YOU WILL MASTER

Python Programing for DA & ML	R Programing for DA & ML	Data Visualization with Power BI & Tableau
SQL for DA & ML	Mathematics for ML	Statistics for ML
Probability for ML	Supervised Learning	Unsupervised Learning
Recommendation System	Time-Series Forecasting	Machine Learning Model Deployment

CERTIFICATE
OF COMPLETION

The IoT Academy
Connecting The Unconnected

Certificate

of Completion

This Certificate is Proudly Presented to

Name Surname

For

Data Analytics, Machine Learning & Generative AI

Through dedication and hard work, they have demonstrated a comprehensive understanding and proficiency in the subject matter, achieving the course objectives with commendable performance.
We wish him/her success throughout his/her career.

Certification ID: xxxxxx

THE IOT ACADEMY PVT LTD
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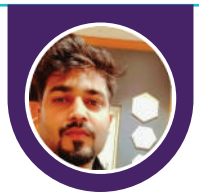
DATE

SIGNATURE

OUR
NOTABLE ALUMNI



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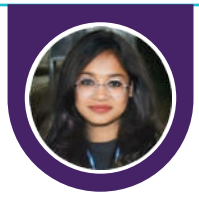
SWAPNIL BHANUSHALI
Associate

DBS



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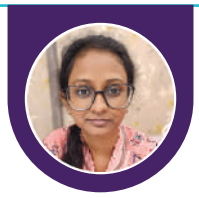

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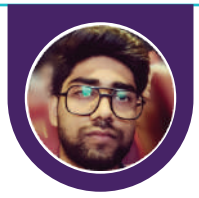


HEMANT RAJ
Assistant Engineer R&D

MORPHEDO

MOHAN TRIVEDI
Project Manager

UST

OUR
CORPORATE PARTNERS

HSBC | KPMG | IBM | wipro

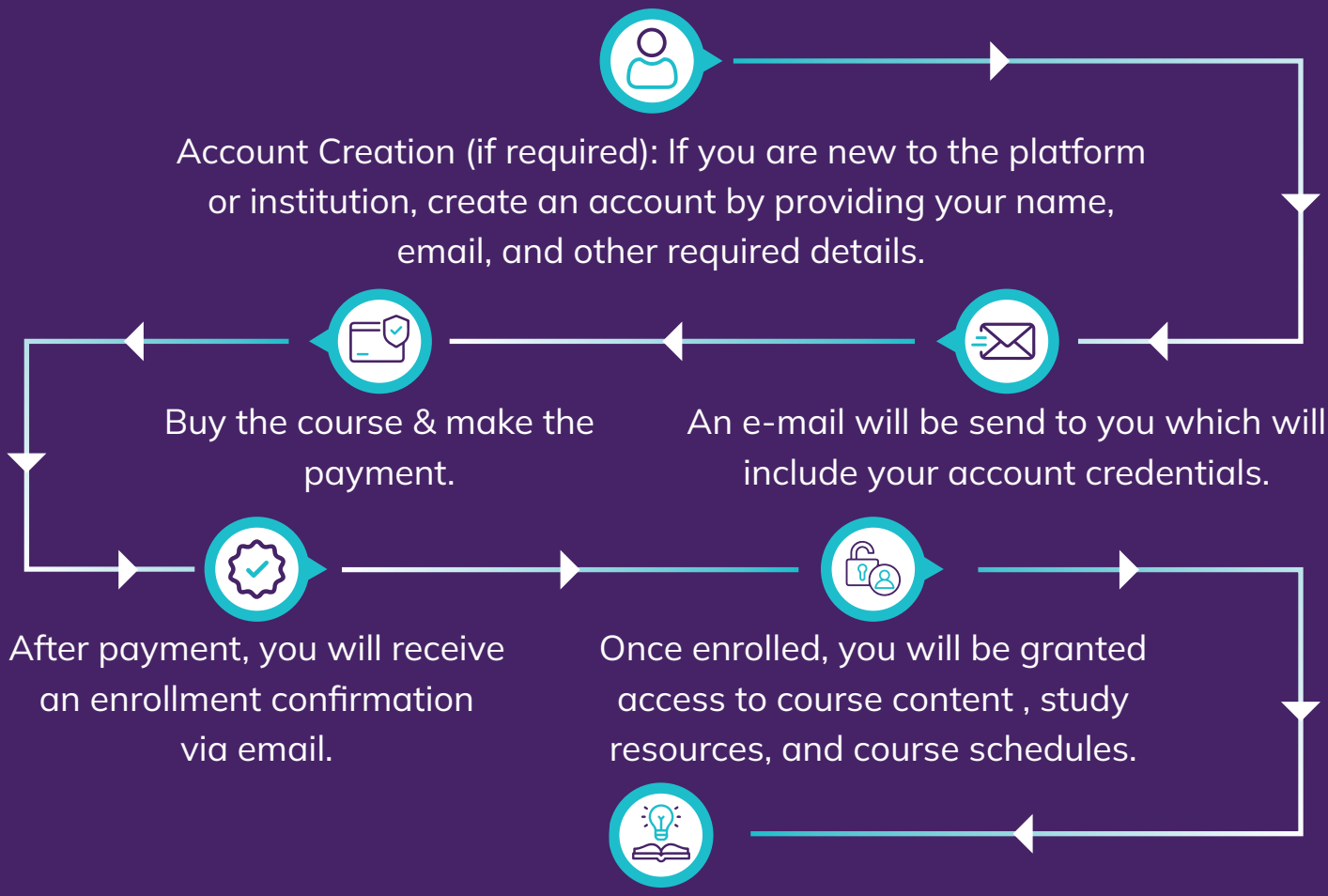
Moody's Analytics | accenture | genpact | ORACLE

kotak Kotak Mahindra Bank | Honeywell | firstsource | HDFC BANK We understand your world

ICICI Bank | WNS | Infosys | Deloitte.

BOSCH | EY Building a better working world | tcs | IKEA

ENROLLMENT PROCESS



LEARNING FORMAT

Self Paced: In self-paced mode, learners can access course materials and complete assignments at their own convenience, without strict deadlines. This format allows flexibility in terms of time and pace, making it ideal for individuals with busy schedules. Learners can progress through the content at their own speed, revisiting lessons as needed. However, self-motivation and time management are crucial to ensure successful course completion.

Dedicated Mentor: A dedicated mentor for this course will guide learners with personalized support and insights throughout their journey. The mentor will provide tailored feedback, address questions, and share additional resources to enhance learning and understanding. This approach allows for a more interactive, hands-on learning experience, ensuring that students can navigate complex topics with the support of an expert, often leading to better retention and mastery of the subject matter. Mentors may also track progress and motivate learners to stay on course.

Program Information:

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By The IoT Academy

VISIT WEBSITE

CONTACT US NOW

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