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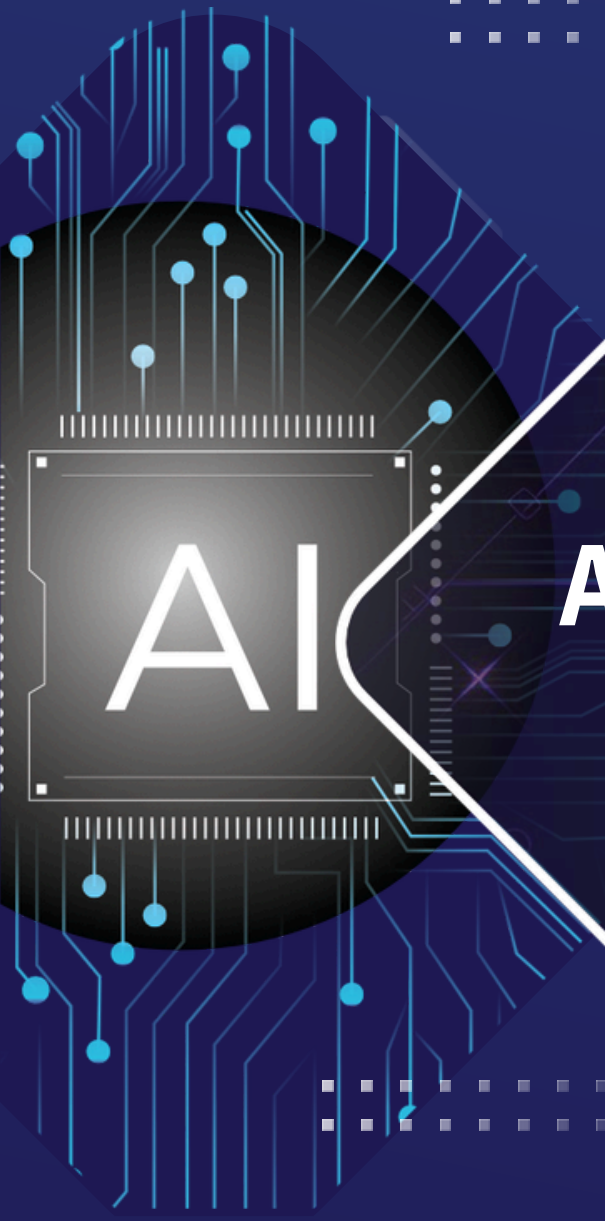
ACADEMY



Six Months Diploma in Artificial Intelligence (AI) and Machine Learning

Explore the World of AI

This program builds complete, industry-ready AI engineers through a structured, progressive curriculum. Students advance from foundational data engineering skills to building and deploying sophisticated AI systems.

6 MONTHS DIPLOMA IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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₹15–25 LPA PER ANNUM

Average Salary after completion

$375 BILLION

Global AI Market Valuation

2.3 MILLION AI JOBS (BY 2027)

Expected Job Openings

01

CURRICULUM OVERVIEW

Learn key AI and ML concepts, including supervised learning, unsupervised learning, neural networks, natural language processing, and more.

02

TOOLS & TECHNOLOGIES

Master cutting-edge tools such as Python, TensorFlow, Keras, and PyTorch, critical for developing AI and ML solutions.

03

HANDS-ON PROJECTS

Gain experience with real-world projects, including predictive models, AI chatbots, and autonomous systems.

04

INDUSTRY DEMAND

Be job-ready in one of the fastest-growing industries, with demand from sectors like healthcare, finance, robotics, and autonomous

PROGRAM HIGHLIGHTS

Our AI and ML diploma offers:

- Expert faculty with industry experience 100+
- hours of guided learning
- Flexible learning options (online/offline)
- Dedicated placement assistance
- Join us to kickstart your career in Artificial Intelligence and Machine Learning.

COURSE CONTENT

— SQL & Database Systems

1. Introduction to Databases

- What is a Database? — Types (Relational vs Non-Relational)
- RDBMS Concepts and MySQL Architecture
- Tables, Rows, Columns — Data Relationships (1–1, 1–M, M–M)
- Entity-Relationship (ER) Model, Primary Key & Foreign Key

2. SQL Fundamentals — DDL & DML

- Commands: CREATE, ALTER, DROPDDL
- Commands: INSERT, UPDATE, DELETEDML
- Constraints: NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK, DEFAULT

3. Data Query Language (DQL)

- SELECT, WHERE, ORDER BY, DISTINCT, LIMIT
- Pattern Matching: LIKE, IN, BETWEEN
- Aggregate Functions: COUNT, SUM, AVG, MIN, MAX
- String Functions: CONCAT, LENGTH, SUBSTRING, REPLACE
- Date Functions: NOW(), CURDATE(), DATE_FORMAT
- Math Functions: ROUND, CEIL, FLOOR

4. Data Grouping & Conditional Logic

- Clause : GROUP BY, HAVING
- CASE Statements for conditional query logic

5. Advanced SQL

- Joins: INNER, LEFT, RIGHT, FULL OUTER, SELF JOIN
- Subqueries (Nested Queries), Views (Virtual Tables)
- CTEs — Common Table Expressions
- Window Functions: ROW_NUMBER(), RANK(), DENSE_RANK(), PARTITION BY

6. Database Automation

- Stored Procedures & Stored Functions
- Triggers — automated event-driven logic
- Cursors — row-by-row data processing

— Python Programming for Data Science

1. Programming Fundamentals

- What is Programming? Compiler vs Interpreter
- Algorithm Design, Flowcharts & Problem-Solving Thinking

2. Python Basics & Core Syntax

- Installation: Anaconda, VS Code environment setup
- Syntax rules, indentation, comments
- Variables — dynamic typing, multiple assignment, type casting

3. Data Types — Deep Understanding

- Primitives: int, float, string, bool
- Collections: List (mutable), Tuple (immutable), Dictionary (key-value), Set (unique)
- Advanced: List Comprehension, Nested Lists

4. Operators & Control Flow

- Operators: Arithmetic, Comparison, Logical, Assignment, Identity, Membership, Bitwise
- Conditionals: if, elif, else, nested conditions
- Loops: for, while, break, continue, pass, nested loops

5. Functions & Functional Programming

- Defining functions — arguments, return values, scope (local/global)
- Lambda Functions — anonymous, one-line functions
- map(), filter(), reduce()Functional Tools:

6. File Handling

- File types, Read, Write, Append operations
- Context Manager: with open() pattern for safe file handling

7. Object-Oriented Programming (OOP)

- Constructor — __init__ method , Class & Object
- Encapsulation — data hiding
- Inheritance — types and usage
- Polymorphism & Abstraction

8. Web Scraping

- HTML basics — understanding document structure
- Requests library — fetching web content
- BeautifulSoup — parsing & extracting data
- Hands-on real website scraping project

— Machine Learning

1. NumPy — Numerical Computing

- Arrays: 1D, 2D, 3D — indexing & slicing
- Broadcasting, Vectorization, Mathematical Operations
- Random Module for data simulation

2. Pandas — Data Handling

- Series & DataFrames — the core data structures
- Data: CSV, Excel, JSON formats Importing
- Data Cleaning — handling missing values, duplicates
- Filtering, Sorting, GroupBy Operations

3. Data Visualization

- Matplotlib Basics & Seaborn Advanced Plots
- Charts: Line, Bar, Histogram, Scatter, Box Plot, Heatmap

4. Statistics for Machine Learning

- Descriptive Stats:Mean, Median, Mode, Variance, Standard Deviation
- Probability Basics, Correlation, Normal Distribution
- Hypothesis Thinking — the foundation of model evaluation

5. Data Preprocessing

- Missing Value Treatment & Outlier Detection
- Encoding: Label Encoding, One Hot Encoding
- Feature Scaling: Min Max Scaler, Standard Scaler
- Feature Engineering — creating new meaningful features

6. Machine Learning Algorithms

- Linear Regression, Multiple Regression, Polynomial Regression
- MSE, RMSE, R^2
- Logistic Regression, K-Nearest Neighbors (KNN)
- Support Vector Machines (SVM), Decision Trees
- Bagging & Random Forest
- Boosting: AdaBoost, Gradient Boosting, XGBoost
- Stacking & Voting

7. Model Evaluation

- Accuracy, Precision, Recall, F1 Score
- Confusion Matrix, Cross-Validation

8. Unsupervised Learning

- K-Means Clustering & Hierarchical Clustering
- PCA — Principal Component Analysis for dimensionality reduction

— Artificial Intelligence

1. Neural Networks — Foundation

- Perceptron — the building block of AI
- ANN Architecture — layers, neurons, weights
- Activation Functions: ReLU, Sigmoid, Tanh
- Forward Propagation & Backpropagation

2. Deep Learning Concepts

- Gradient Descent — optimizing model weights
- Loss Functions — measuring model error
- Overfitting & Regularization techniques
- Dropout — reducing overfitting in deep nets

3. Computer Vision with OpenCV

- OpenCV Basics — image reading, display, manipulation
- Image Processing — filters & transformations
- Edge Detection algorithms
- Face Detection using Haar Cascades
- CNN Introduction — Convolutional Neural Networks

4. Natural Language Processing (NLP)

- Tokenization, Stop Words Removal
- Stemming & Lemmatization — text normalization
- Bag of Words & TF-IDF — text feature extraction
- Sentiment Analysis — classifying text emotion

5. Sequence Models

- RNN — Recurrent Neural Networks
- LSTM — Long Short-Term Memory networks

CAREER PATHS

Graduates of this program are qualified for the most in-demand roles in the AI & Data industry.

Data Analyst

Analyze structured data to uncover trends, build dashboards, and support business decisions using SQL, Python, and BI tools, with strong demand across industries in 2026 and clear growth into advanced analytics and data science roles.

ML Engineer

Build, train, and deploy machine learning models into production using tools like Scikit-learn, XGBoost, TensorFlow, and cloud platforms, with very high demand in 2026 as companies seek engineers to turn AI research into real-world applications.

AI Engineer

Design and build intelligent systems using deep learning, NLP, and computer vision for advanced applications like chatbots, recommendation engines, and automation tools, with massive demand in 2026 across robotics, healthcare, autonomous systems, and enterprise AI.

Python Developer

Design prompts, workflows, and RAG pipelines for LLMs like GPT, and build AI agents for automation and decision-making, with rapidly growing demand in 2026 as companies adopt AI and evolve these roles into AI Automation Engineers.

NLP Engineer

Develop text-based AI systems like chatbots, sentiment analysis, translation, and search using Transformers and BERT, with strong demand in 2026 across AI products such as voice assistants and multilingual platforms.

AI Product Developer

Build end-to-end AI-powered applications combining frontend, backend, and AI integration with strong product thinking, with huge demand in 2026 across startups and SaaS for creating real-world AI products or launching your own.

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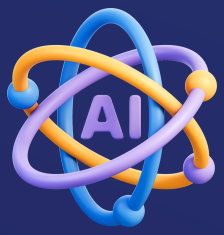

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