Advanced Certification Program in

ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

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AI-Machine Learning Engineer Career Path

Basic Python

Introduction to Machine Learning

Machine learning

- ML Libraries
- Non-ML- Libraries

Deep learning

- Deep Learning Libraries
- Deep Learning Algorithms

Basic and Advanced Computer Vision

Time Series, Generative AI using Autoencoders, and Reinforcement Learning

NLP Preparation

Projects, Interview & Resume Prep.

JOB IN HAND

You are a AI & Machine Learning Engineer

About Digicrome

Digicrome is the world's #1 online bootcamp provider that enables learners through rigorous and highly specialized training. We focus on emerging technologies and processes that are transforming the digital world, at a fraction of the cost and time of traditional approaches. Over one million professionals and 2000 corporate training organizations have harnessed our award-winning programs to achieve their career and business goals

The Best program

Kickstart Your Career With New Skills

AI & ML ADMISSION

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Period 2024 - 2025 »»»

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40k+
Trusted Learners

20k+
Students Secured jobs

500+
All courses till now batch

Since our inception, we have been focused on developing cutting-edge learning methodologies by involving learners and experienced faculty, along with providing individuals and corporations with high-quality training materials that aid professionals in accomplishing their career objectives and furthering their careers.
We work with some of the world's finest institutions and certifying authorities and we aspire to provide high-quality training to professionals all across the globe. We have a proven track record of effectively training thousands of professionals in both classroom and online training. Come join us and let us transform your professional lives via digital skills.

> Our mission is to offer affordable and industry-relevant education that enables the advancement and development of India's workforce.

4.6/5 Google Rating

Why Learn AI & ML?

The tech hubs like Mumbai, Bengaluru, Hyderabad, and Chennai are known to have most of the Artificial Intelligence Specialists in the nation. These cities encourage and have the national headquarters of companies like Google, Amazon, etc.

- The average salary of an AI specialist in Bengaluru is 8.80 LPA. It is the top city of preference for AI specialists in India.

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30k+
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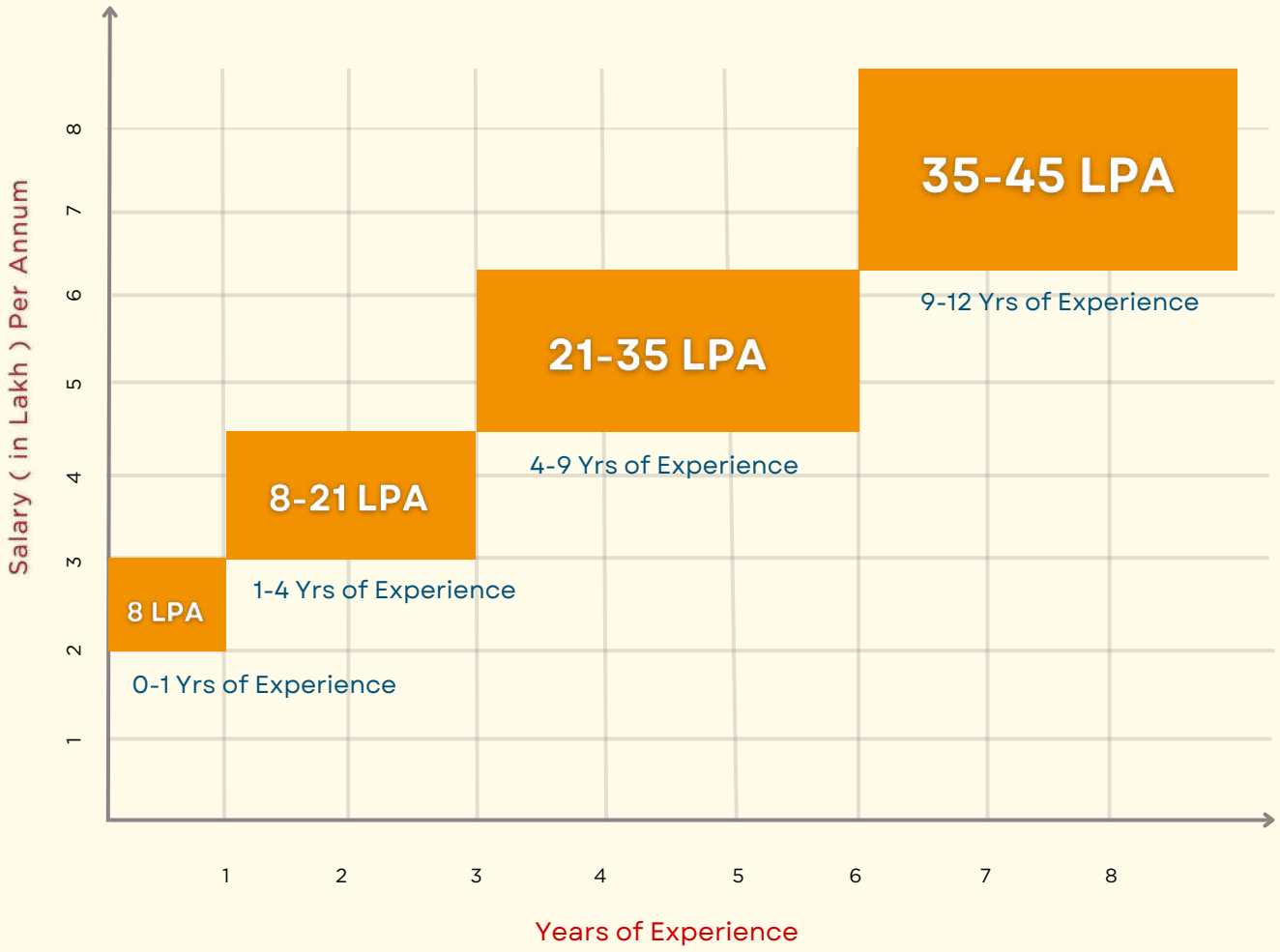
Career in AI & Machine Learning



Some of the job roles associated with Artificial Intelligence include Machine Learning, Prompt Engineer, ML Analyst, ML Engineer, ML Scientist, AI Analyst, AI Engineer, Computer Vision Engineer, AI Business Analyst, AI Product Manager, AI/ML Consultant, AI/ML Developer, Algorithm Engineer, NLP Engineer, Data Architect, AI Research Scientist, Deep Learning Engineer, Decision Scientist, Data Visualization Specialist, and many others.

Learning Path & Career Services

Step 1

1 Introduction to Machine Learning

Step 2

2 Advanced Machine Learning Techniques

Step 3

3 Artificial Intelligence and Deep Learning using Keras and TensorFlow

Step 4

4 Basic and Advanced Computer Vision

Step 5

5 Time Series, Generative AI and Reinforcement Learning

Step 6

6 Natural Language Processing

Step 7

7 Professional Soft Skills and Final Capstone Project

- Resume Preparation
- Profile Building

Program Certificate

Note:- 2 Weeks

Crash Course on Python

Syllabus Overview

COURSE MODULE | TIME DURATION: 7 MONTHS

28 Weeks: 112+ HOURS

PROGRAM CURRICULUM

10 Modules — Total 58 Class

Introduction to AI & ML - Orientation Class

2 Weeks

Crash Course on Python

- 1.1 Basics Of Python
- 1.2 Data Structures in Python
- 1.3 Control Structure And Functions
- 1.4 Python NumPy
- 1.5 Data Wrangling using Pandas
- 1.6 Exploratory Data Analysis Using Matplotlib
- 1.7 Exploratory Data Analysis Using Seaborn

Machine Learning

Month 1

1.Introduction to Machine Learning

- 1.1 What is ML
- 1.2 Why ML
- 1.3 Types of ML
- 1.4 Main Challenges - Overfitting, Underfitting, Poor Quality data, Irrelevant Features etc
- 1.5 What are Hyperparameters
- 1.6 How to Select ML model

2.Classification Metrics

- 2.1 Accuracy
- 2.2 Recall
- 2.3 Precision
- 2.4 F1 Score
- 2.5 Confusion Matrix
- 2.6 Classification Report
- 2.7 Precision/Recall Tradeoff
- 2.8 ROC Curve
- 2.9 AOC Curve
- 2.10 Binary and Multilabel Classification
- 2.11 Feature Engineering and Feature Importance/Selection

3.ClassifcationModels

- 3.1 Gradient Descent and Stochastic
- 3.2 Logistic Regression
- 3.3 K Nearest Neighbors
- 3.4 Naive Bayes
- 3.5 Support Vector Machines
- 3.6 Linear Discriminant Analysis
- 3.7 Decision Trees
- 3.8HyperparameterTuning
- GridSearchCV and
- RandomizedSearchCV

4.Ensemble Techniques

- 4.1 Bagging - Eg: Voting Classifiers
- 4.2 Boosting - XG Boost, Adaboost, etc
- 4.3 Cross Validation
- 4.4 Random Forest Classifier
- 4.5 XG Boost Classifier
- 4.6 Stacking
- 4.7 Hyper parameter Tuning

Month 2

5.Regression Techniques

- 5.1 Simple Linear Regression
- 5.2 Multiple Linear Regression
- 5.3 Polynomial Regression
- 5.4 Cost Function and Gradient Descent
- 5.5 Performance Metrics - MSE, RMSE, MAE etc
- 5.6 Heteroskedasticity, Non Normality and Correlated Errors
- 5.7 Hyper parameter Tuning

6.Regression Models

- 6.1 Decision Tree Regressor
- 6.2 Support Vector Machines
- 6.3 K Nearest Neighbors
- 6.4 Random Forest
- 6.5 Boosting
- 6.6 HyperparameterTuning

7.UnsupervisedLearning

- 7.1 Introduction to Unsupervised Learning
- 7.2 K Means Clustering
- 7.3 Hierarchical Clustering
- 7.4 Model Based Clustering
- 7.5 DBSCAN
- 7.6 Anamoly Detection using Gaussian Mixtures

8.Dimensionality Reduction - Principal Component Analysis

9.Recommendation Systems

Deep Learning and Aritificial Intelligence

Month 3

i. Deep Learning using Keras and Tensorflow

1.Introduction to Artificial Neural Networks

- 1.1 Biological to Artificial Neurons
- 1.2 The perceptron
- 1.3 Multi-layer Perceptrons (MLPs)
- 1.4 Input Layer, Hidden Layers and Output layers
- 1.5 Weights and Biases
- 1.6 Regression MLPs
- 1.7 Classification MLPs
- 1.8 Activation functions and Optimizers

2.Implementation using Tensorflow and Keras

- 2.1 Building a Neural Network using Sequential API
- 2.2 Building a Neural Network using Functional API
- 2.3 Building a Neural Network using Sub classing API
- 2.4 Saving and Restoring a Model
- 2.5 Callbacks

3.Training Deep Neural Networks

- 3.1 Vanishing/Exploding Gradients
- 3.2 Batch Normalization
- 3.3 Gradient Clipping
- 3.4Transfer Learning - Using Pretrained Layers
- 3.5 Pretraining on AuxiliaryTask
- 3.6 Faster Optimizers - RMSprop, AdaGrad,

  Adam, Nadam, Nesterov Accelerated Gradient
- 3.7 Decision Trees

4.Fine Tuning Models

- 4.1 How to choosenumber of hiddenlayers and number of Neurons
- 4.2 Learning Rate,Optimizer, Batch sizeand Activation Functions
- 4.3 L1 and L2 Regularization
- 4.4 Dropouts and Batch Normalization
- 4.5 Max Norm Regularization

Month 4

ii. Artificial Neural Networks and Computer Vision

1.Introduction to Computer Vision

- 1.1 The Architecture of Visual Cortex
- 1.2ConvolutionalLayers
- 1.3 Feature Maps
- 1.4 Pooling
- 1.5 Padding
- 1.6 Stacking Multiple feature Maps

2.Handson Experience - Building an Image Classifier using CNN

3.Object Detection, ImageSegmentation, and SemanticSegmentation

4.CNN Architectures

- 1.1 Learning Predefined Architectures - LeNet,AlexNet, Google LeNet, ResNet, VGGNet, Xception, SENet
- 1.2 Transfer Learning - Using Pretrained Models from Keras
- 1.3 Classification and Localization

Month 5

iii. Time Series, Generative AI using Autoencoders, and Reinforcement Learning

1.Processing Sequences using Recurrent Neural Networks

- 1.1 Introduction to Recurrent Neurons and Layers
- 1.2 Memory Cells
- 1.3 Implementation and Training of Recurrent Neural Networks
- 1.4 Time Series using Recurrent Neural Networks
- 1.5 Deep RNNs for Time Series
- 1.6 Forecasting Several Time Steps Ahead
- 1.7 Handling Long Sequences using LSTM and GRU cells

2.Autoencoders

- 2.1 Introduction to Autoencoders
- 2.2 Encoder Decoder Networks
- 2.3 Stacked Autoencoders
- 2.4 Reconstructing Fashion MNIST Data using Autoencoders
- 2.5 Types of Autoencoders - Convolution, Recurrent, Denoising, Sparse and Variational Autoencoders
- 2.6 Anamoly Detection using Autoencoders

3.Generative Adversarial Networks

- 2.1 What are GANs? Why GANs?
- 2.2 Generator and Discriminator
- 2.3 Building a Deep Convolutional GAN on Fashion MNIST Data

4.Reinforcement Learning

- 4.1 What is Reinforcement Learning?
- 4.2 Learning to Optimize Rewards
- 4.3 Policy Search
- 4.4 Hands on Experience using Open AI Gym
- 4.5 The Credit Assignment Problem
- 4.6 Q Learning and Deep Q Learning
- 4.7 Implementing Deep Q Learning using keras

Month 6

iv. Natural Language Processing

1.Introduction to Natural Language Processing

- 1.1 Overview of NLP and its Applications
- 1.2 Data Preprocessing for NLP
- 1.3Key Components - Tokenization, Stemmingand Lemmatization
- 1.4 Hands on Experience - Generating AI Text
- 1.5 Sentiment Analysis in NLP using Keras

2.Neural Machine Translation (NMT)

- 2.1 Bidirectional Recurrent Neural Networks
- 2.2 Beam Search
- 2.3 Sequence to Sequence Model
- 2.4 Building a basic Encoder Decoder Network for NMT

3.Attention Mechanism

- 3.1 Introduction to Attention Mechanisms
- 3.2 Visual Attention
- 3.3 The Transformer Architecture
- 3.4 Fine Tuning NLP Models for NLP Tasks

4.Hands on Experience - Building a Basic Chatbot

- 4.1 Natural Language Processing -
- 4.2 Building a Basic Chatbot like Chat GPT
- 4.3 How Chat GPT work?
- 4.4 Perfect execution of Chat GPT using Prompt Engineering

Professional Soft Skills and Final Capstone Project

Month 7

1.Introduction to Natural Language Processing

- 1.1 Understanding Professionalism
- 1.2 Management Fundamentals- Everything about communication
- 1.3 Effective email writing
- 1.4Acing Self Introduction and Body Language
- 1.5 Resume Fundamentals
- 1.6 Mock Interview - I
- 1.7 Mock Interview - II
- 1.8 Group Discussion

Final End-to-End Capstone Project

COURSE TOOLS & MORE

TensorFlow NumPy python ChatGPT

GENERATIVE AI

Working Tools

seaborn

Keras Chatbot Matplotlib pandas scikit learn

CAPSTONE PROJECT

CASE STUDIES

EXPERIENTIAL LEARNING

HACKATHONS

ASSIGNMENTS

Module Course + Internship

07 Months Course Overview

- 1 Months of Practical & Module Training
- 4 Months of Advance AI & ML Training
- 1 Month Deep Learning using Keras and TensorFlow Training
- 1 Month Interview & Resume Building Preparation

Note:- We have 03 month internship in this course simultaneously

After the Preparation Placement opportunity

CAPSTONE PROJECT

Test your skills and mettle with a capstone project

Transforming Industries: 25+ Cutting-Edge Capstone Projects by Digicrome

Retail

Actionable insights for improving sales of consumer durables Retailers using POS data analytics

Techniques used: Market Basket Analysis, RFM (Recency-Frequency Monetary) Analysis, Time Series Forecasting

Web & Social Media

Trapping Social Media exchanges on Twitter-A case study of the 2015 Floods

Techniques used: Topic Modeling using 9 Latent Dirichlet Allocation. K-Means & Hierarchical Clustering

E-commerce

Techniques used: Text Mining, Kmeans Clustering, Regression Trees, XGBoost, Neural Network

Banking

Techniques used: Linear Discriminant Analysis, Logistic Regression, Neural Network, Boosting, Random Forest, CART

Supply Chain

Developing a demand forecasting model for optimizing the supply chain

Techniques used: Text Mining, Kmeans Clustering, Regression Trees, XGBoost, Neural Network

Insurance

Personal insurance digital assistant

Techniques used: NLP (Natural Language Processing), Vector Space Model, Latent Semantic Analysis

Retail Consumers

Market basket analysis for consumer durables

Techniques used: Market Basket Analysis, Brand Loyalty Analysis

Entrepreneurship /Start-Ups

Start-up insights through data analysis

Techniques used: Univariate and Bivariate Analysis, Multinomial Logistic Regression, Random Forest$

Healthcare

Prediction of user's mood using smartphone data

Techniques used: Logistic Regression, Random Tree, ADA Boost, Random Forest, KSVM

Finance & Accounts

Vendor invoicing grief project

Techniques used: Conditional Inference Tree, Logistic Regression, CART and Random Forest

Main Point

Point 1
Most Dominating Field in IT right now is Artificial Intelligence and Machine Learning

Point 2
Highest Paying job from last 5 years

Point 3
More than 30 + profiles that you can applay after doing this training

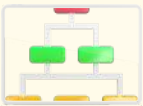
TYPE OF DATA WE CAN USE

Image 1
Visual data in the form of images.

Video 2
Visual data in the form of Videos.

Audio 3
Data represented in the form of sound or speech.

Text 4
Unstructured data in the form of text.



Tabular 5
The data has a well-defined structure with a consistent format.

Sequential 6
Data representing a sequence of events occurring in a particular order.

Time Series 7
Data collected over a period of time at regular intervals.

Rows and Columns 8
Data is arranged in a tabular format with rows and columns.

Step 1

How much maths is involved?

Math work at the back end you don't have to do it manually Just like calculator you give input see output.

Step 2

How much Statistics is involved?

Stats is back bone of Data Science and AI but its simple and you know already most of it like taking average , line charts ,bar graph etc

Step 3

Is there any Entry Barrier?

No, any one from any back ground can learn it

Step 4

Can Non Technical Enter?

We teach all technologies from scratch with baby steps so it will never be an issue

Why Learn AI Today

- Top Paying IT Jobs
- Most in Demand
- Great Scope
- Still Growing
- Future-Proofing Career
- Global Demand

Program Details

Qualification:

BE/B.Tech (from any branch), BBA/MBA, MCA/M.Tech, B.Com, B.Sc, BA (in any branch)

Note:- Must have studied in 12th standard

Course Duration: 112+ Hours

Weekend Batch: 07 Months
Saturday - Sunday: 2.0 hrs/day

About Instructors:

Experienced software development educators impart valuable real-world expertise and efficient strategies, equipping students for achievement in the field.

Total Fees:

~~₹ 1,49,999/-~~

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₹ 75,000/-

EASY EMI

Registration Fee: ₹ 5000/-

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Course Main Topic

Machine Learning

Machine Learning
Supervised
Regression
Time Series
Classification
Unsupervised
Cluster

Artificial Intelligence

Deep Learning
Convolutional Neural Network
Computer Vision
Image Processing
Recurrent Neural Network
Text Modeling
Time Series Modeling
Natural Language Processing

Tools & Libraries

TensorFlow
Keras
Python
NumPy
Pandas
Matplotlib
Seaborn
Scipy
Scikit-Learn

Certificates

After the Completion of the Course, You'll get 5 Professional Certificates:

1) Course Completion Certificate - Advanced Certificate Programme in Artificial Intelligence and Artificial Intelligence

2) Machine Learning Certificate

3) Computer Vision Professional Certificate

4) Natural Language Processing Certificate

5) Python Programming Certificate

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