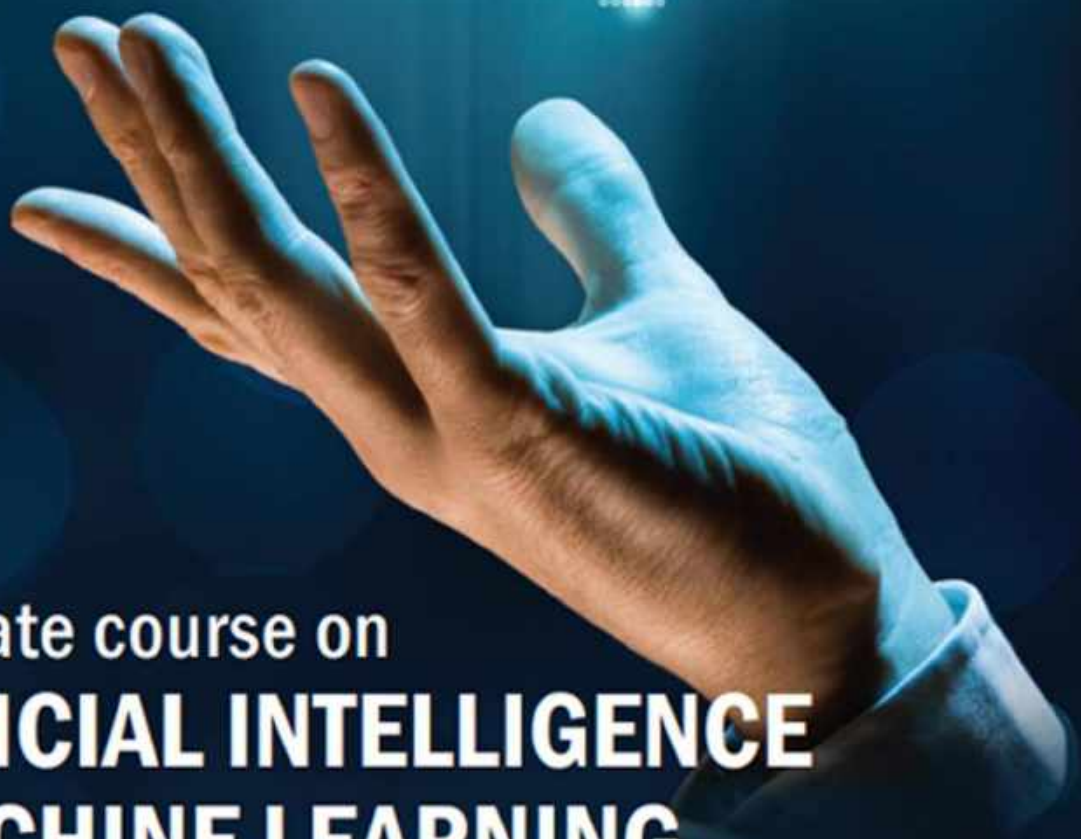


THE FUTURE
IS HERE



Certificate course on
**ARTIFICIAL INTELLIGENCE
& MACHINE LEARNING**

JobsAcademy
Shaping Careers...

Course Duration : 2 Months

eLearning Duration : 1 Year



COURSE DESCRIPTION

Machine learning and neural networks are fast becoming pillars on which you can build intelligent applications. The course will begin by introducing you to Python and discussing using AI search algorithms. You will learn math-heavy topics, such as regression and classification, illustrated by Python examples.

You will then progress on to advanced AI techniques and concepts, and work on real-life data sets to form decision trees and clusters. You will be introduced to neural networks, which is a powerful tool benefiting from Moore's law applied on 21st-century computing power. By the end of this course, you will feel confident and look forward to building your own AI applications with your newly-acquired skills!

ELIGIBILITY CRITERIA



BE / B.Tech / BCA / MCA / B.Sc. (Maths) / M.Sc (Maths)



Candidates with Mathematics, Statistics background will be given preference.

LEARNING OBJECTIVES

1

Understand the importance, principles, and fields of AI

Learn to implement basic Artificial Intelligence concepts with Python

2

3

Apply regression and classification concepts to real-world problems

Perform predictive analysis using decision trees and random forests

4

5

Perform clustering using the k-means and mean shift algorithms

Understand the fundamentals of Deep Learning via practical examples

6

KEY PROGRAM HIGHLIGHTS

Self-Paced learning through LMS

Virtual Instructor-led training

Life time Job Assistance

Guaranteed Guest Lecture sessions by Industry Experts

One to One Individual Care through Video Conferencing

Entire recorded repeat class access

100% Hands-on Training

Industry Standard Projects

Certification by Jobs Academy



COURSE CONTENTS

Introduction to Artificial Intelligence

- Artificial Intelligence Overview
- A Perceptron
- Neural Networks
- Activation Functions
- Deep Learning with Keras
- Errors and Biases
- Back Propagation

Principles of Artificial Intelligence

Installation and Setup

Lesson Overview

Introduction to AI and Machine Learning

How Does AI Solve Real World Problems?

Fields and Applications of Artificial Intelligence

AI Tools and Learning Models

The Role of Python in Artificial Intelligence

A Brief Introduction to the NumPy Library

Python for Game AI

Breadth First Search and Depth First Search

Lesson Summary

Python for AI and ML

Python Environment Setup and Essentials

Python basics and string manipulation

Control Structures – if, for loop and while Loop

Basic Data Structures - lists, tuples, dictionaries

Creating, accessing, and slicing

Functions, Lambda Functions, Map, Reduce

Comprehension techniques

Working with Data in Python

Working with NumPy Arrays

Accessing Array elements: Indexing, Slicing

Data Manipulation with Pandas

Pandas File Read and Write Support

Data Operation, Summarization, Slicing, Filtering

Data Visualization in Python using Matplotlib

Creating Line Plots, Bar Charts, Pie Charts, Histograms, Scatter Plots, Box Plots

Exploratory Data Analysis

Data Preprocessing

Exploratory Data Analysis

Feature Engineering

One hot encoding

Hands-on for titanic dataset, flight dataset

Machine Learning Algorithms

Machine Learning overview

Types of Machine Learning

Supervised, Unsupervised, Reinforcement

Linear Regression - Case Study

Logistic Regression

Decision Tree

Ensemble Learning: Bagging, Boosting, Random Forest, Adaboost

Support Vector Machine, KNN, Naïve Bayes

Clustering - K-Means

Dimensionality Reduction - PCA

AI with search techniques and games

Lesson Overview

Heuristics

Tic-Tac-Toe

Pathfinding with the A* Algorithm

Introducing the A* Algorithm

Game AI with the Minmax Algorithm

Game AI with Alpha-Beta Pruning

Lesson Summary

Robot control system using deep reinforcement learning

Lesson Overview

Linear Regression with One Variable

Fitting a Model on Data with scikit-learn

Linear Regression with Multiple Variables

Preparing Data for Protection

Polynomial and Support Vector Regression

Lesson Summary



Deep Learning with Neural Networks

- Deep Learning - A revolution in AI
- Advantages of Deep Learning over Machine Learning
- Introduction to Tensorflow
 - Building your first neural network (ANN) with python
- Keras Basics
- Classification and regression using tensorflow

Classification

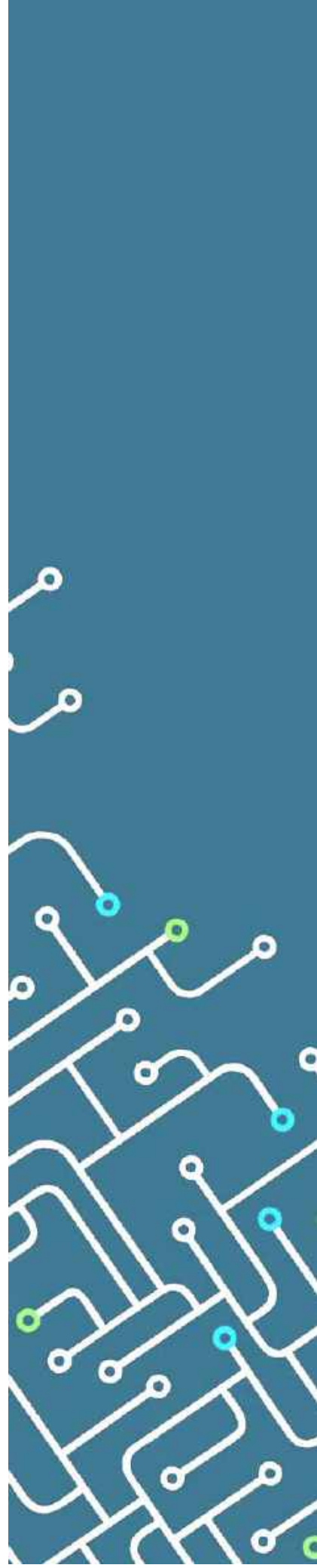
- Lesson Overview
- The Fundamentals of Classification Part 1
- The Fundamentals of Classification Part 2
- The k-nearest neighbor Classifier
- Classification with Support Vector Machines
- Lesson Summary

Using trees for Predictive Analysis

- Lesson Overview
- Introduction to Decision Trees
- Entropy
- Gini Impurity
- Precision and Recall
- Random Forest Classifier
- Random Forest Classification Using scikit-learn
- Lesson Summary

Natural Language Processing

- Unstructured Data
- NLP Overview
- Tokenization, Stemming, Lemmatization
- Removing stop words
- POS
- TF-IDF
- NLTK (Natural Language Toolkit)
- SMS Spam Classifier using Python
- Sentiment Analyzer using Python





Book a demo



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For Counselling / Enrolment please contact us at

8585858746 or enquiry@jobsacademy.co.in

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