Artificial Intelligence & Deep Learning Course with Tensorflow

About Intellipaat

Intellipaat is a fast-growing professional training provider that is offering training in over 150 most sought-after tools and technologies. We have a learner base of 600,000 in over 32 countries and growing. For job assistance and placement we have direct tie-ups with 80+ MNCs.

Key Features of Intellipaat Training:

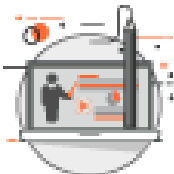|			
Instructor Led Training 32 Hrs of highly interactive instructor led training	**Self-Paced Training** 24 Hrs of Self-Paced sessions with Lifetime access	**Exercise and project work** 48 Hrs of real-time projects after every module	**Lifetime Access** Lifetime access and free upgrade to latest version
Support Lifetime 24*7 technical support and query resolution	**Get Certified** Get global industry recognized certifications	**Job Assistance** Job assistance through 80+ corporate tie-ups	**Flexi Scheduling** Attend multiple batches for lifetime & stay updated.

About the Course

Intellipaat offers the comprehensive Deep Learning training that will help you to work on the cutting-edge of artificial intelligence. As part of the training you will master the various aspects of artificial neural networks, supervised and unsupervised learning, logistic regression with neural network mindset, binary classification, vectorization, Python for scripting machine learning applications.

Instructor Led **Duration – 32 Hrs** **Weekend Batch –3 Hrs/Session**	**Self Paced** **Duration – 24 Hrs**

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Why take this Course?

Artificial Intelligence today is taking over each and every industry domain. Machine Learning and especially Deep Learning are the most important aspects of Artificial Intelligence that are being deployed everywhere from search engines to online movie recommendations. Taking the Intellipaat Deep Learning training can help professionals to build a solid career in a rising technology domain and get the best jobs in top organizations.

Course Content

Module /Topic
Introduction to Deep Learning & Neural Networks ❖ The domain of machine learning and its implications to the artificial intelligence sector ❖ The advantages of machine learning over other conventional methodologies ❖ Introduction to Deep Learning within machine learning, how it differs from all others methods of machine learning ❖ Training the system with training data, supervised and unsupervised learning ❖ Classification and regression supervised learning, clustering and association unsupervised learning ❖ The algorithms used in these types of learning ❖ Introduction to AI, Introduction to Neural Networks ❖ Supervised Learning with Neural Networks ❖ The concept of Machine Learning, Basics of statistics, probability distributions, hypothesis testing, Hidden Markov Model
Multi-layered Neural Networks ❖ Introduction to Multi-Layer Network ❖ The concept of Deep neural networks, Regularization ❖ Multi-layer perceptron, capacity, and overfitting ❖ Neural network hyperparameters, logic gates ❖ The various activation functions in neural networks like Sigmoid, ReLu and Softmax ❖ Hyperbolic functions ❖ Backpropagation, convergence ❖ Forward propagation, overfitting, hyperparameters
Training of neural networks ❖ The various techniques used in training of artificial neural networks ❖ Gradient descent rule, perceptron learning rule, tuning learning rate ❖ A stochastic process, optimization techniques

❖ Regularization techniques, regression techniques
❖ Lasso L1, Ridge L2, vanishing gradients, transfer learning
❖ Unsupervised pre-training
❖ Xavier initialization, and vanishing gradients

Deep Learning Libraries

❖ How Deep Learning Works, Activation Functions
❖ Illustrate Perceptron, Training a Perceptron, Important Parameters of Perceptron, Multi-layer Perceptron
❖ What is Tensorflow
❖ Introduction to TensorFlow open source software library for designing
❖ Building and training Deep Learning models
❖ Python Library behind TensorFlow
❖ Tensor Processing Unit (TPU) programmable
❖ AI accelerator by Google, Tensorflow code-basics
❖ Graph Visualization, Constants, Placeholders, Variables
❖ Step by Step – Use-Case Implementation, Keras

Introduction to Keras API

❖ Keras high-level neural network for working on top of TensorFlow
❖ Defining complex multi-output models
❖ Composing models using Keras
❖ Sequential and functional composition
❖ Batch normalization
❖ Deploying Keras with TensorBoard
❖ Neural network training process customization.

TFLearn API for TensorFLow

❖ Implementing neural networks using TFLearn API
❖ Defining and composing models using TFLearn
❖ Deploying TensorBoard with TFLearn

DNN: Deep Neural Networks

❖ Mapping the human mind with Deep Neural Networks
❖ The various building blocks of Artificial Neural Networks
❖ The architecture of DNN, its building blocks

❖ The concept of reinforcement learning in DNN

❖ The various parameters and layers

❖ Activation functions and optimization algorithms in DNN

CNN: Convolutional Neural Networks

❖ Introduction to CNN

❖ CNN's Application, Architecture of a CNN

❖ Convolution and Pooling layers in a CNN

❖ Understanding and Visualizing a CNN

❖ Transfer Learning and Fine-tuning Convolutional Neural Networks

❖ Feature maps, Kernel filter, pooling

❖ Deploying convolutional neural network in TensorFlow

RNN: Recurrent Neural Networks

❖ Intro to RNN Model

❖ Application use cases of RNN

❖ Modeling sequences

❖ Training RNNs with Back-propagation

❖ Long Short-Term Memory (LSTM)

❖ Recursive Neural Tensor Network Theory

❖ Recurrent Neural Network Model

❖ Basic RNN cell, unfolded RNN, training of RNN, and dynamic RNN

❖ Time-series predictions

GPU in Deep Learning

❖ Introduction to GPUs and how they differ from CPUs

❖ The importance of GPUs in training Deep Learning Networks

❖ The forward pass and backward pass training technique

❖ The GPU constituent with simpler core and concurrent hardware

Autoencoders & Restricted Boltzmann Machine (RBM)

❖ Introduction to RBM and autoencoders

❖ Deploying it for deep neural networks

❖ Collaborative filtering using RBM

❖ Features of autoencoders

❖ Applications of autoencoders

Chatbots

❖ Automated conversation bots using one of the descriptive techniques

- o IBM Watson
- o Google API.AI
- o Microsoft's Luis
- o Amazon Lex
- o Generative
- o Open-Close Domain Bots
- o The sequence to Sequence model (LSTM)

Project Work

Project 1: Image recognition with TensorFlow

Industry: Internet Search

Problem Statement: Building a robust deep learning model to recognize the right object on the internet depending on the user search for the image.

Description: In this project, you will learn how to build Convolutional Neural Network using Google TensorFlow. You will do visualization of images using training, providing input images, losses, and distributions of activations and gradients. You will learn to break each image into manageable tiles and input it to the Convolutional Neural Network for the desired result.

Highlights:

❖ Constructing Convolutional Neural Network using TensorFlow
❖ Convolutional, Dense & Pooling layers of CNN's
❖ Filtering the images based on user queries.

Project 2: Handwriting recognition with Neural Networks

Industry: General

Problem Statement: Building an artificial Intelligence network with TensorFlow to identify the handwriting based on the input training data.

Topic: You will build an artificial intelligence model for training the neural network to recognize the handwriting. The various layers of a neural network like input, hidden and output layers along with their functions will be clear.

Implementing back-propagation for calculating the error of each neuron used with a gradient-based optimizer is explained.

Highlights:

- ❖ TensorFlow to build Neural Networks
- ❖ Choosing the right number of hidden layers
- ❖ The importance of backpropagation.

Project 3: Building an AI-based chatbot

Industry: E-commerce

Description: This project involves building the chatbots using Artificial Intelligence and Google TensorFlow.

Problem Statement: Understanding the customer needs and offering the right services through Artificial Intelligence chatbot. You will learn how to create the right artificial neural network with the right amount of layers to ensure the customer queries are comprehensible to the Artificial Intelligence chatbot. This will help to understand natural language processing, understanding beyond keywords, data parsing and providing the right solutions.

Highlights:

- ❖ Breaking user queries into components
- ❖ Building neural networks with TensorFlow
- ❖ Natural language processing.

Project 4: E-commerce product recommendation

Industry: E-commerce

Problem Statement: Recommending the right projects to customers by artificial intelligence

Description: This project involves working with recommender systems to provide the right product recommendation to customers with TensorFlow. You will learn how to use Artificial Intelligence to check for user past buying habits, find out what are the products that go hand-in-hand, and recommend the best products for a particular product.

Highlights:

- ❖ Building neural networks with TensorFlow
- ❖ Looking at huge amounts of data & gaining insights
- ❖ Building recommendation engine with TensorFlow Graph.

Intellipaat Job Assistance Program

Intellipaat is offering comprehensive job assistance to all the learners who have successfully completed the training. A learner will be considered to have successfully completed the training if he/she finishes all the exercises, case studies, projects and gets a minimum of 60% marks in the Intellipaat qualifying exam.

Intellipaat has exclusive tie-ups with over 80 MNCs for placement. All the resumes of eligible candidates will be forwarded to the Intellipaat job assistance partners. Once there is a relevant opening in any of the companies, you will get a call directly for the job interview from that particular company.

Frequently Asked Questions:

Q 1. What is the criterion for availing the Intellipaat job assistance program?

Ans. All Intellipaat learners who have successfully completed the training post-April 2017 are directly eligible for the Intellipaat job assistance program.

Q 2. Which are the companies that I can get placed in?

Ans. We have exclusive tie-ups with MNCs like **Ericsson, Cisco, Cognizant, Sony, Mu Sigma, Saint-Gobain, Standard Chartered, TCS, Genpact, Hexaware**, and more. So you have the opportunity to get placed in these top global companies.

Q 3. Does Intellipaat help learners to crack the job interviews?

Ans. Intellipaat has an exclusive section which includes the top interview questions asked in top MNCs for most of the technologies and tools for which we provide training. Other than that our support and technical team can also help you in this regard.

Q 4. Do I need to have prior industry experience for getting an interview call?

Ans. There is no need to have any prior industry experience for getting an interview call. In fact, the successful completion of the Intellipaat certification training is equivalent to six months of industry experience. This is definitely an added advantage when you are attending an interview.

Q 5. What is the job location that I will get?

Ans. Intellipaat will try to get you a job in your same location provided such a vacancy exists in that location.

Q 6. Which is the domain that I will get placed in?

Ans. Depending on the Intellipaat certification training you have successfully completed, you will be placed in the same domain.

Q 7. Is there any fee for the Intellipaat placement assistance?

Ans. Intellipaat does not charge any fees as part of the placement assistance program.

Q 8. If I don't get a job n the first attempt, can I get another chance?

Ans. Definitely, yes. Your resume will be in our database and we will circulate it to our MNC partners until you get a job. So there is no upper limit to the number of job interviews you can attend.

Q 9. Does Intellipaat guarantee a job through its job assistance program?

Ans. Intellipaat does not guarantee any job through the job assistance program. However, we will definitely offer you full assistance by circulating your resume among our affiliate partners.

Q 10. What is the salary that I will be getting once I get the job?

Ans. Your salary will be directly commensurate with your abilities and the prevailing industry standards.

What makes us who we are?

"I want to talk about the rich LMS that Intellipaat Artificial Intelligence training offered. The extensive set of PPTs, PDFs, and course material were of the highest quality and due to this my learning with Intellipaat was excellent."

-Shreyash Limbhetwala

"I had taken the Artificial Intelligence master program. Since there are so many technologies involved in the AI course, getting your query resolved at the right time becomes the most important aspect. But with Intellipaat there was no such problem as all my queries were resolved in less than 24 hours."

- Giri Karnal

"The Intellipaat AI training videos really made me excited about studying. They were so elaborate and so professionally created that I could learn AI from the comfort of my home thanks to those learner-friendly videos. I am grateful to Intellipaat. "

- Nitesh Kumar