Artificial Intelligence

Certification Training

IntelliPaat

Table of Contents

1. About the Program
2. About Intellipaat
3. Key Features
4. Career Support
5. Why take up this course?
6. Who should take up this course?
7. Program Curriculum
8. Project Work
9. Certification
10. Intellipaat Success Stories
11. Contact Us

About the Program

Intellipaat's Artificial Intelligence course online certification using TensorFlow is an industry-recognized certification training program to help you master convolutional neural networks (CNNs), perceptron in CNNs, TensorFlow, TensorFlow code, transfer learning, graph visualization, recurrent neural networks (RNNs), Deep Learning libraries, GPU in Deep Learning, Keras and TFLearn APIs, backpropagation, and hyperparameters via hands-on projects. Learn AI by enrolling in the best Artificial Intelligence course online using TensorFlow and become a successful Artificial Intelligence Engineer!

About Intellipaat

Intellipaat is one of the leading e-learning training providers with more than 600,000 learners across 55+ countries. We are on a mission to democratize education as we believe that everyone has the right to quality education.

Our courses are delivered by subject matter experts from top MNCs, and our world-class pedagogy enables learners to quickly learn difficult topics in no time. Our 24/7 technical support and career services will help them jump-start their careers in their dream companies.

Key Features

32 HRS INSTRUCTOR-LED TRAINING

24 HRS SELF-PACED TRAINING

48 HRS REAL-TIME PROJECT WORK

LIFETIME ACCESS

24/7 TECHNICAL SUPPORT

INDUSTRY-RECOGNIZED CERTIFICATION

JOB ASSISTANCE THROUGH 80+ CORPORATE TIE-UPS

FLEXIBLE SCHEDULING

Career Support

SESSIONS WITH INDUSTRY MENTORS

Attend sessions from top industry experts and get guidance on how to boost your career growth

MOCK INTERVIEWS

Mock interviews to make you prepare for cracking interviews by top employers

GUARANTEED INTERVIEWS & JOB SUPPORT

Get interviewed by our 400+ hiring partners

RESUME PREPARATION

Get assistance in creating a world-class resume from our career services team

Why take up this course?

Today, Artificial Intelligence has conquered almost every industry. Within a year or two, nearly 80 percent of the emerging technologies will be based on AI. Machine Learning, especially Deep Learning, which is the most important aspect of Artificial intelligence, is used for AI-powered recommender systems (chatbots) and search engines for online movie recommendations. To remain relevant and gain expertise in this emerging technology, enroll in Intellipaat's AI course. This will help you build a solid AI career and get the best Artificial Intelligence Engineer positions in leading organizations.

Who should take up this course?

- Professionals working in the domains of Analytics, Data Science, e-commerce, search engines, etc.
- Software professionals and new graduates seeking a career change

Program Curriculum

ARTIFICIAL INTELLIGENCE COURSE CONTENT

1. **INTRODUCTION TO DEEP LEARNING AND NEURAL NETWORKS**

   1.1 Field of Machine Learning and its impact on the field of Artificial Intelligence

   1.2 The benefits of Machine Learning w.r.t. traditional methodologies

   1.3 Deep Learning introduction and how it is different from all other Machine Learning methods

   1.4 Classification and regression in supervised learning

   1.5 Clustering and association in unsupervised learning and the algorithms that are used in these categories

   1.6 Introduction to AI and neural networks

   1.7 Machine Learning concepts

   1.8 Supervised learning with neural networks

   1.9 Fundamentals of statistics, hypothesis testing, probability distributions, and hidden Markov models

2. **MULTI-LAYERED NEURAL NETWORKS**

   2.1 Multi-layered networks introduction, regularization, and deep neural networks

   2.2 Multi-layer perceptron

   2.3 Overfitting and capacity

   2.4 Neural network hyperparameters and logic gates

   2.5 Different activation functions used in neural networks, including ReLU, Softmax, Sigmoid, and hyperbolic functions

   2.6 Backpropagation, forward propagation, convergence, hyperparameters, and overfitting

3. **ARTIFICIAL NEURAL NETWORKS AND VARIOUS METHODS**

   3.1 Various methods that are used to train artificial neural networks

   3.2 Perceptron learning rule, gradient descent rule, tuning the learning rate, regularization techniques, and optimization techniques

   3.3 Stochastic process, vanishing gradients, transfer learning, and regression

techniques

4. **DEEP LEARNING LIBRARIES**

   4.1 Understanding how Deep Learning works

   4.2 Activation functions, illustrating perceptron, and perceptron training

   4.3 Multi-layer perceptron and the key parameters of perceptron

   4.4 TensorFlow introduction and its open-source software library that is used to design, create, and train

   4.5 Deep Learning models followed by Google's tensor processing unit (TPU) programmable AI

   4.6 Python libraries in TensorFlow, code basics, variables, constants, and placeholders

   4.7 Graph visualization, use-case implementation, keras, and more

5. **KERAS API**

   5.1 Keras high-level neural network for working on top of TensorFlow

   5.2 Defining complex multi-output models

   5.3 Composing models using Keras

   5.3 Sequential and functional composition and batch normalization

   5.4 Deploying Keras with TensorBoard and neural network training process customization

6. **TFLEARN API FOR TENSORFLOW**

   6.1 Using TFLearn API to implement neural networks

   6.2 Defining and composing models and deploying TensorBoard

7. **DNNS (DEEP NEURAL NETWORKS)**

   7.1 Mapping the human mind with deep neural networks (DNNs)

   7.2 Several building blocks of artificial neural networks (ANNs)

   7.3 The architecture of DNN and its building blocks

   7.4 Reinforcement learning in DNN concepts, various parameters, layers, optimization of algorithms in DNN, and activation functions

8. **CNNS (CONVOLUTIONAL NEURAL NETWORKS)**

   8.1 What is a convolutional neural network?

   8.2 Understanding the architecture and use cases of CNN

8.3 What is a pooling layer? How to visualize using CNN?

8.4 How to fine-tune a convolutional neural network?

8.5 What is transfer learning?

8.6 Understanding recurrent neural networks, kernel filter, feature maps, and pooling, and deploying convolutional neural networks in TensorFlow

9. RNNS (RECURRENT NEURAL NETWORKS)

9.1 Introduction to the RNN model

9.2 Use cases of RNN and modeling sequences

9.3 RNNs with backpropagation

9.4 Long short-term memory (LSTM)

9.5 Recursive neural tensor network theory, the basic RNN cell, unfolded RNN, and dynamic RNN

9.6 Time-series predictions

10. GPU IN DEEP LEARNING

10.1 GPU introduction, how it is different from CPU, and the significance of GPU

10.2 Deep Learning networks and forward pass and backward pass training techniques

10.3 GPU constituent with simpler core and concurrent hardware

11. AUTOENCODERS AND RESTRICTED BOLTZMANN MACHINE (RBM)

11.1 Introduction to RBM and autoencoders

11.2 Deploying RBM for deep neural networks and using RBM for collaborative filtering

11.3 Autoencoders features and applications of autoencoders

12. DEEP LEARNING APPLICATIONS

12.1 Image processing

12.2 Natural Language Processing (NLP): Speech recognition and video analytics

13. CHATBOTS

13.1 Automated conversation bots leveraging any of the following descriptive techniques: IBM Watson, Microsoft's Luis, and open–closed domain bots

13.2 Generative model and the sequence to the sequence model (LSTM)

Project Work

Artificial Intelligence Assignments and Projects

Auto-encoder Assignment

As part of this assignment, you have to implement an LSTM encoder, create an input sequence of numbers, build an LSTM RNN model on top of this data, compile the model with ‘adam’ to be the optimizer and the loss to be ‘mse’, fit the model on data and set the number of epochs to be 300, and also, predict the values and verify it with the input data.

CNN Assignment

In this assignment, you have to build your convolutional neural network using the MNIST dataset. For this, you will have to download the MNIST dataset through Keras. You will be asked to fit the dataset to a model and evaluate the loss and accuracy of the model. You will be working with pooling layers, dense layers, dropout layers, flatten layers, and NumPy.

Binary Classification on ‘Customer_Churn’ Using Keras

In this project, you will have to analyze the data of a telecom company to find insights and stop customers from churning out to other telecom companies. You will be working on data manipulation and visualization and create three different models with the help of Keras.

Face Detection Project

For the project, you will be using Python 3.5 (64-bit) with OpenCV for face detection. The system will have to be able to detect multiple faces in a single image. You will be working with essential libraries such as cv2 and glob (glob helps in finding all the pathnames matching with a specified pattern).

Keras Assignment

Here, you will build a sequential model using Keras on top of the Diabetes dataset to find out if a patient has diabetes or not. You will use the Stochastic Gradient as the optimization algorithm. You will be required to build another sequential model where the ‘Outcome’ is the dependent variable, and all other columns are predictors.

MLP Assignment

You will be detecting wine fraud using neural networks as a part of this assignment. You will use the latest version of Scikit-Learn (>0.18) and the wine dataset from the UCI Machine Learning repository. Then, you need to import the dataset, split the data, and use the predict () method to get predictions. You will also have to train your model using Scikit-Learn's estimator objects.

AI and Deep Learning Intro Assignment

For this assignment, you will need to install Anaconda on your system with the Python version 3.6 or above, create a TensorFlow environment, download TensorFlow, and download Pandas, NumPy, Scikit-Learn, SciPy, and Matplotlib in both Anaconda and TensorFlow environments. You will also need to install Keras and TFLearn in the TensorFlow environment.

RNN Assignment

As part of the assignment, you will be using an airline-passenger dataset to predict the number of passengers for a particular month. You will write a simple function to convert a single column of data into a two-column dataset. You will then divide the data into train and test sets.

TensorFlow Assignment

Through this assignment, you will learn to create a session in TensorFlow. You will define constants and perform computations using the session, print 'Hello World' using the same, and create a simple linear equation, y=mx+c in TensorFlow, where m and c are variables and x is a placeholder.

TFLearn Assignment

In this assignment, you will be required to find out the factors that can cause cancer in a patient. You will need to load the dataset and print the number of samples and features in the data. Then, you will divide the data into train and test sets and create a network.

Certification

After the completion of the course, you will get a certificate from Intellipaat.

Success Stories

Kevin K Wada

Thank you very much for your top-class service. A special mention should be made for your patience in listening to my queries and giving me a solution, which was exactly what I was looking for. I am giving you a 10 on 10!

Sampson Basoah

The Intellipaat team helped me in selecting the perfect course that suits my profile. The whole course was practically oriented, and the trainers are always ready to answer any question. I found this course to be impactful. Thank you.

Himanshu Oberoi

Great teaching team! All trainers and the support team were very helpful and easily reachable. The course content of this program covers all the topics, all basic-to-advanced modules.

Shamirna Micheal

It is a genuine platform for learning. I finished my course recently from Intellipaat. The trainers were excellent at teaching. Further, the course was well-structured, and the lectures were really flexible. I am currently working, and I still got the time to complete the course within the given time. I believe it was mainly possible because of the 24/7 support system and the clarity of their teaching.

CONTACT US

INTELLIPAAT SOFTWARE SOLUTIONS PVT. LTD.

Bangalore

AMR Tech Park 3, Ground Floor, Tower B,
Hongasandra Village, Bommanahalli,
Hosur Road, Bangalore – 560068

USA

1219 E. Hillsdale Blvd. Suite 205,
Foster City, CA 94404

If you have any further queries or just want to have a conversation with us, then do call us.

IND: +91-7022374614 | US: 1-800-216-8930