



# Certificate in Deep Learning with Python

**Vskills Certifications**

Vskills Brochure



# Certificate in Deep Learning with Python

Deep learning is a new superpower which will let you build AI systems that just weren't possible a few years ago. It's time to utilize intelligent automation to help your business grow, keep organized, and stay on top of the competition.

## Why should one take this certification?

Deep Learning is currently enabling numerous exciting applications in speech recognition, music synthesis, machine translation, natural language understanding, and many others. AI is transforming multiple industries.

After finishing this course, you will likely find creative ways to apply it to your work. We will help you master Deep Learning, understand how to apply it, and build a career in AI.

## Who will benefit from taking this certification?

Job seekers looking for employment in various IT companies, PSUs or MNCs. Certification in Deep learning with Python framework benefits Data Science professionals, students and professionals across various Industries.

## Test Details

- **Duration:** 60 minutes
- **No. of questions:** 50
- **Maximum marks:** 50, Passing marks: 25 (50%)

There is no negative marking in this module.

## Fee Structure

Rs. 3,999/- (Excludes taxes)\*

\*Fees may change without prior notice, please refer <http://www.vskills.in> for updated fees

## Companies that hire Vskills Deep Learning with Python Professionals

IT companies, MNCs, Consultancies hire Pytorch professionals for Data Science related opportunities. Companies employing Data Science include Capgemini, JP Morgan Chase, TCS, Wipro, Zensar, Accenture, Infor etc.

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## Module 1

### 1. UNDERSTANDING DEEP LEARNING

- 1.1 The Course Overview
- 1.2 A Brief History of Deep Learning
- 1.3 Deep Learning Today
- 1.4 Tools, Requirements, and Setup

### 2. BUILDING THE BASIC BLOCKS OF MACHINE LEARNING

- 2.1 Exploring Supervised Learning
- 2.2 Representational Learning and Feature Engineering
- 2.3 Linear Regression
- 2.4 The Perceptron

### 3. DIVING INTO DEEP NEURAL NETWORKS

- 3.1 Feedforward Networks
- 3.2 Backpropagation
- 3.3 Neural Networks from Scratch
- 3.4 Overfitting and Regularization

### 4. DISCOVERING CONVOLUTIONAL NEURAL NETWORKS (CNNs)

- 4.1 Understanding CNNs
- 4.2 Implementing a CNN
- 4.3 Deep CNNs

### 5. USING CNNs TO SOLVE INCREASINGLY COMPLEX TASKS

- 5.1 Very Deep CNNs
- 5.2 Batch Normalization
- 5.3 Fine-Tuning

### 6. LEARNING ABOUT DETECTION AND SEGMENTATION

- 6.1 Semantic Segmentation
- 6.2 Fully Convolutional Networks

## **7. EXPLORING RECURRENT NEURAL NETWORKS**

- 7.1 Recurrent Neural Networks
- 7.2 LSTM and Advancements

## **8. OBJECT DETECTION USING CNNs**

- 8.1 Building a CNN to Detect General Images
- 8.2 Training and Deploying on a Cluster

## **9. MOVING FORWARD WITH DEEP LEARNING AND AI**

- 9.1 Comparison of DL Frameworks
- 9.2 Exciting Areas for Upcoming Research

### **Module 2**

## **10. GETTING STARTED WITH DEEP LEARNING**

- 10.1 The Course Overview
- 10.2 Fundamentals of Neural Networks
- 10.3 Training Deep Neural Networks
- 10.4 Using Forward Propagation, Backprop, and SGD
- 10.5 Logistic Regression with a Neural Network Mindset
- 10.6 Convolutional Neural Network Handwriting Recognition

## **11. DEEP MODELS WITH MXNET AND TENSORFLOW**

- 11.1 Working with MxNet and Gluon
- 11.2 Defining and Training Neural Networks in MxNet/Gluon
- 11.3 Working with TensorFlow and Keras
- 11.4 Defining and Training Neural Networks in Keras/TensorFlow
- 11.5 Comparing the Two Frameworks
- 11.6 Mini Project - CIFAR Classification

## **12. IMPROVING DEEP NEURAL NETWORKS**

- 12.1 Weight Initialization for Deep Networks
- 12.2 Regularization and Dropout
- 12.3 Normalizing and Vanishing/Exploding Gradients
- 12.4 Mini Project - SIGNS Dataset

**13. OPTIMIZATION ALGORITHMS**

- 13.1 Understanding Stochastic Gradient Descent
- 13.2 Adaptive Learning Algorithms - RMSProp and Adam
- 13.3 Mini Project - Language Modeling

**14. HYPERPARAMETER TUNING**

- 14.1 Hyperparameters
- 14.2 Tuning Hyperparameters - Grid Search
- 14.3 Tuning Hyperparameters - Random Search
- 14.4 Mini Project - Music Synthesis

## Certifications

- ▶ **Accounting, Banking & Finance**
  - Certified GST Professional
  - Certified AML-KYC Compliance Officer
  - Certified Business Accountant
  - Certified BASEL III Professional
  - Certified GAAP Accounting Standards Professional
  - Certified Treasury Markets Professional
- ▶ **Big Data**
  - Certified Hadoop and Mapreduce Professional
- ▶ **Cloud Computing**
  - Certified Cloud Computing Professional
- ▶ **Design**
  - Certified Interior Designer
- ▶ **Digital Media**
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  - Certified Inbound Marketing Professional
  - Certified Digital Marketing Professional
- ▶ **Foreign Trade**
  - Certified Export Import (Foreign Trade) Professional
- ▶ **Health, Nutrition and Well Being**
  - Certified Fitness Instructor
- ▶ **Hospitality**
  - Certified Restaurant Team Member (Hospitality)
- ▶ **Human Resources**
  - Certified HR Compensation Manager
  - Certified HR Staffing Manager
  - Certified Human Resources Manager
  - Certified Performance Appraisal Manager
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  - Certified Data Entry Operator
  - Certified Office Administrator
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  - Certified Master in Project Management
  - Certified Scrum Specialist
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  - Certified Real Estate Consultant
- ▶ **Marketing**
  - Certified Marketing Manager
- ▶ **Quality**
  - Certified Six Sigma Green Belt Professional
  - Certified Six Sigma Black Belt Professional
  - Certified TQM Professional
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  - Certified International Logistics Professional
  - Certified Logistics & SCM Professional
  - Certified Supply Chain Management Professional
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  - Certified IPR & Legal Manager
  - Certified Labour Law Analyst
  - Certified Business Law Analyst
  - Certified Corporate Law Analyst
- ▶ **Information Technology**
  - Certified Angular JS Professional
  - Certified Basic Network Support Professional
  - Certified Business Intelligence Professional
  - Certified Core Java Developer
  - Certified E-commerce Professional
  - Certified IT Support Professional
  - Certified PHP Professional
  - Certified Selenium Professional
- ▶ **Mobile Application Development**
  - Certified Android Apps Developer
  - Certified iPhone Apps Developer
- ▶ **Security**
  - Certified Ethical Hacking and Security Professional
  - Certified Network Security Professional
- ▶ **Management**
  - Certified Corporate Governance Professional
  - Certified Corporate Social Responsibility Professional
  - Certified Leadership Skills Professional
- ▶ **Life Skills**
  - Certified Business Communication Specialist
  - Certified Public Relations Officer
- ▶ **Media**
  - Certified Advertising Manager
  - Certified Advertising Sales Professional
- ▶ **Sales, BPO**
  - Certified Sales Manager
  - Certified Telesales Executive

& many more job related certifications

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