

# Deep Learning Specialty Training

*COURSE CONTENT*

## GET IN TOUCH



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## About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

## About Course

The Deep Learning Specialty Training offered by Multisoft Systems is an advanced course designed to immerse learners in the world of deep learning and artificial intelligence. This comprehensive training program encompasses key concepts and techniques in deep learning, including neural networks, machine learning algorithms, and practical applications in AI.

## Module 1: Introduction to Deep Learning

- ✓ Introduction to deep learning trends and applications
- ✓ Examples of deep learning applications

## Module 2: Neural Network Basics

- ✓ Machine learning problem setup and neural network mindset
- ✓ Vectorization for efficient computation

## Module 3: Shallow Neural Network

- ✓ Building a neural network with one hidden layer
- ✓ Understanding forward propagation and backpropagation

## Module 4: Deep Neural Network

- ✓ Computation in deep learning
- ✓ Building and training deep neural networks for computer vision tasks

## Module 5: Practical Aspects of Deep Learning

- ✓ Initialization methods for deep neural networks
- ✓ Regularization techniques to prevent overfitting

## Module 6: Optimization Algorithms

- ✓ Advanced optimization techniques for neural networks
- ✓ Random minibatching and learning rate decay

## **Module 7: Hyperparameter Tuning, Batch Normalization, Frameworks**

- ✓ Introduction to the TensorFlow framework
- ✓ Training neural networks on TensorFlow datasets

## **Module 8: ML Strategy**

- ✓ Strategic guidelines for setting goals and managing ML production workflow
- ✓ Error analysis procedures

## **Module 9: Foundations of Convolutional Neural Networks**

- ✓ Understanding pooling and convolutional layers
- ✓ Building deep CNNs for image classification

## **Module 10: Deep Convolutional Models: Case Studies**

- ✓ Exploring advanced tricks and methods in deep CNNs
- ✓ Applying transfer learning to pretrained models

## **Module 11: Object Detection**

- ✓ Using CNNs for object detection tasks

## **Module 12: Face Recognition & Neural Style Transfer**

- ✓ Applying CNNs for face recognition tasks
- ✓ Implementing neural style transfer for art generation

## **Module 13: Recurrent Neural Networks**

- ✓ Introduction to recurrent neural networks (RNNs)

- ✓ Variants of RNNs for sequential data modeling

## **Module 14: Natural Language Processing & Word Embeddings**

- ✓ NLP applications with deep learning models
- ✓ Word embeddings for text analysis

## **Module 15: Sequence Models & Attention Mechanism**

- ✓ Enhancing sequence models with attention mechanisms
- ✓ Speech recognition and audio data processing

## **Module 16: Transformer Network**

- ✓ Understanding the functioning of transformer networks