

CERTIFICATION IN DEEP LEARNING



Course Code : OCIT0015

Deep learning (also known as deep structured learning or hierarchical learning) is part of a broader family of machine learning methods based on learning data representations, as opposed to task-specific algorithms. Learning can be supervised, semi-supervised or unsupervised. In deep learning, each level learns to transform its input data into a slightly more abstract and composite representation. Deep learning refers to the number of layers through which the data is transformed.

Curriculum

Module 1:

· NumPy Crash Course Overview, Pandas Crash Course, Data Viz Crash Course, SciKit Learn Overview

Module 2:

· TensorFlow Basic Syntax, TensorFlow Graphs and Placeholders, TF Neural Network

Module 3:

· TensorFlow Regression Example, TensorFlow Classification Example, Regression Exercise, Classification Exercise

Module 4:

· Regression Exercise Solution, Classification Exercise Solution, Saving and Loading Models, Convolutional Neural Networks

Module 5:

· Basic Manual RNN, RNN with TF API, Time Series Exercise, Time Series Exercise Solutions, Word2Vec.ipynb

Module 6:

· Simple Autoencoder for PCA, Linear Autoencoder for PCA Exercise, Linear Autoencoder for PCA Exercise Solution, Stacked Autoencoder

Module 7:

· Generative Adversarial Networks, Example on GAN

Learning Outcomes

- Understand basic building blocks for many deep architectures, through Applied mathematics and machine learning basics.
- Understand how to write first deep network.
- Solving Problems through pre trained model.
- Learn about several Recurrent Neural Network (RNN) architectures and how to apply them for different tasks with sequential input/output.
- How to generate morph and search images with deep learning.