

IN THE ALGORITHM ECONOMY, ARTIFICIAL INTELLIGENCE IS THE NEW ELECTRICITY.

# DEEP LEARNING

The market is expected to be worth USD 1772.9 Million by 2022, growing at a CAGR of 65.3% between 2016 and 2022. This signals a burgeoning adoption of deep learning across various industries such as automotive, healthcare, finance and more.

Source: MarketandMarkets™



Deep Learning Hands On:  
Introduction to Deep Learning with Python and TensorFlow

Corporate Training Courses

2 Day Session

3 Modules Per/Day

RM420  
Per Person

To register visit:

[www.DeepLearningMY.com](http://www.DeepLearningMY.com)

# Introduction to Deep Learning

## Prerequisites

Must have some knowledge in Python and understand basic programming fundamentals such as functions and variables

## Who Should Attend

Anyone interested in to learn more about Deep Learning, or kickstart a career as a Data Scientist. This includes Students, Data Analysts, Business Owners, Entrepreneurs or any individual who wishes to leverage on powerful Deep Learning tools to add value wherever they are.

## Workshop Format

Hands on Lab.  
Fundamental theory and practical.

## Course Overview

Organizations are using deep learning and AI at every stage of growth, from start-ups to Fortune 500s. Deep learning, the fastest growing field in AI, is empowering immense progress in all kinds of emerging markets and will be instrumental in ways we haven't even imagined. Today's advanced deep neural networks use algorithms, big data, and the computational power of the GPU to change this dynamic. Machines are now able to learn at the speed, accuracy and scale that are driving true artificial intelligence and AI Computing. Learn the latest techniques on how to design, train, and deploy neural network-powered machine learning in your applications. You'll explore widely used open-source frameworks and deep learning platforms.

## Learning Outcomes

- Introduction to Neural Networks
- Getting Started with Deep Learning
- Building an ANN using Python libraries (TensorFlow)
- Introduction to Convolutional Neural Network (CNNs)
- Deep Learning for Image Classification (CNNs)
- Introduction to Recurrent Neural Network (RNNs)
- Deep Learning for Time Series (RNNs)
- Fine tuning model and Transfer Learning

## Course Outline

### INTRODUCTION LEVEL - DAY 1 & 2

#### Day 1

What is Deep Learning and what are Neural Networks?

- Deep Learning as a branch of AI
- Neural networks and their history and relationship to neurons
- Creating a neural network in Python

Artificial Neural Networks (ANN) Intuition

- The activation function (utility function or loss function)
- How do NN's work?
- How do NN's learn?
- Gradient descent
- Stochastic Gradient descent
- Backpropagation

Building an ANN

- Getting the python libraries
- Constructing ANN
- Using the bank customer churn dataset
- Predicting if customer will leave or not.

Evaluating Performance of an ANN

- Evaluating the ANN
- Improving the ANN
- Tuning the ANN

Hands-On Exercise (60 min)

- Participants will be asked to build the ANN from the previous exercise.
- Participants will be asked to improve the accuracy of their ANN.
- SoftMax and Cross-entropy

Building a CNN (60 min)

- Getting the python libraries
- Constructing a CNN
- Using the Image classification dataset
- Predicting the class of an image

#### Day 2

Evaluating Performance of a CNN (60 min)

- Evaluating the CNN
- Improving the CNN
- Tuning the CNN

Hands-On Exercise (60 min)

- Participants will be asked to build the CNN from the previous exercise.
- Participants will be asked to improve the accuracy of their CNN.

Recurrent Neural Networks (RNN) Intuition (60 min)

- What are RNN's?
- Vanishing Gradient problem
- LSTMs
- Practical intuition
- LSTM variations

**Building a RNN (60 min)**

- Getting the python libraries
- Constructing RNN
- Using the stock prediction dataset
- Predicting stock price

**Evaluating Performance of a RNN (60 min)**

- Evaluating the RNN
- Improving the RNN
- Tuning the RNN

**Hands-On Exercise (60 min)**

- Participants will be asked to build the RNN from the previous exercise.
- Participants will be asked to improve the accuracy of their RNN.

