Real Time College

Course: TensorFlow for Deep learning with Kera's

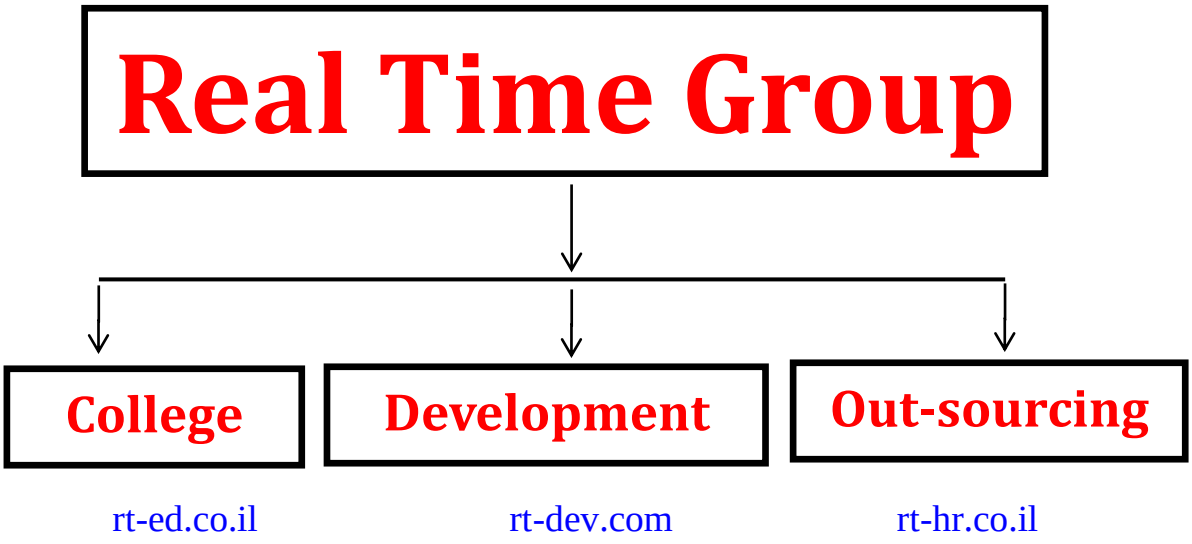
Duration: 60 Hours

Hands-On-Training: 60%

Real Time Group is a multi-disciplinary dynamic and innovative Software Solutions Center, established in 2007.

Providing Software solutions, professional services and consulting, end-to-end flexible system infrastructure, outsourcing, integration and training services for Hardware, Software and ML Systems.

The company is divided into the following three Divisions:



Training Division:

Professional Training Services for Hardware, Software, RT-OS and Embedded systems industries.

We provide the knowledge and experience needed to enable professional engineers to Develop, Integrate, Software and ML Projects.

In order to ensure experience, all courses are practical – hands-on-training.
The latest Development and Automation equipment which are adopted by the industry are used.

All students are supplied with Development-Boards for home-work and course projects.

Course Overview:

Traditional Neural Networks rely on shallow nets, composed of one input, one hidden layer and one output layer.
Deep-learning networks are distinguished from these ordinary Neural Networks having more hidden layers, or so-called more depth. These kinds of nets can discover hidden structures within unlabeled and unstructured data (i.e. images, sound, and text), which constitutes the vast majority of data in the world.

TensorFlow is one of the best libraries to implement deep learning.
Used for numerical computation of mathematical expressional, using data flow graphs. Nodes in the graph represent mathematical operations, while the edges represent the multidimensional data arrays (tensors) that flow between them.

It was created by Google and tailored for Machine Learning. In fact, it is being widely used to develop solutions with Deep Learning.

In this TensorFlow course, you will learn the basic concepts of TensorFlow, the main functions, operations and the execution pipeline. Starting with a simple “Hello Word” example, throughout the course you will be able to see how TensorFlow can be used in curve fitting, regression, classification and minimization of error functions.

This concept is then explored in the Deep Learning world. You will learn how to apply TensorFlow for backpropagation to tune the weights and biases while the Neural Networks are being trained. Finally, the course covers different types of Deep Architectures, such as Convolutional Networks, Recurrent Networks and Autoencoders.

Who should attend:

- Suitable for anyone who needs to quickly speed up with developing ML\AI applications.

Prerequisite:

- This course is intended for learners who have a basic knowledge of programming in python.

TensorFlow for Deep learning Curriculum

Basic ANN:

A. Introduction to ANN Section
B. Perceptron Model
C. Neural Networks
D. Activation Functions
E. Cost Functions and Gradient Descent
F. Backpropagation

TensorFlow vs. Keras Explained:

A. Preparing the Data
B. Creating and Training the Model
C. Model Evaluation
D. Exploratory Data Analysis
E. Data Preprocessing and Creating a Model
F. Model Evaluation and Predictions
G. EDA and Preprocessing
H. Dealing with Overfitting and Evaluation
I. Exploratory Data Analysis
J. Dealing with Missing Data
K. Categorical Data
L. Data PreProcessing
M. Creating and Training a Mode
N. Model Evaluation
O. Tensorboard

CNN:

A. Image Filters and Kernels
B. Convolutional Layers
C. Pooling Layers
D. MNIST Data Set
E. Creating and Training the Model
F. Model Evaluation
G. Evaluating the Model
H. Reading in the Data

I. Data Processing
J. Creating the Model
K. Creating the Model

RNN:

A. RNN Basic
B. Vanishing Gradients
C. LSTMS and GRU
D. RNN Batches
E. Batch Generator
F. Creating the Model
G. LSTMs and Forecasting
H. Time Series

NLP:

A. Text Processing
B. Creating Batches
C. Creating the Model
D. Training the Model
E. Generating Text

Autoencoders:

A. Autoencoder Basics
B. Autoencoder for Dimensionality Reduction
C. Autoencoder for Images
D. Noise Removal

GAN:

A. The Model
B. Model Training
C. Deep Convolutional Generative Adversarial Networks