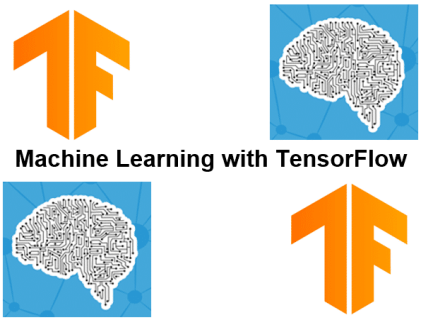
Machine Learning with TensorFlow

Duration: 3 days **Price: € 2250**

Open Schedule



Audience Course Machine Learning with Tensor Flow

The course Machine Learning with TensorFlow is intended for data scientists who want to use Python and the TensorFlow machine learning libraries to make predictions based on models.

Prerequisites for course Machine Learning with TensorFlow

To participate in this course knowledge of and experience with Python is required and knowledge of data analysis libraries such as Numpy, Pandas and Matplotlib is desirable.

Realization training Machine Learning with TensorFlow

The theory is discussed on the basis of presentations. Illustrative demos clarify the concepts. The theory is interchanged with exercises. The Anaconda distribution with Jupyter notebooks is used as a development environment. Course times are from 9:30 to 16:30.

Official Certificate Machine Learning with TensorFlow

After successful completion of the course participants receive an official certificate Machine Learning with TensorFlow.

Content Course Machine Learning with TensorFlow

In the course Machine Learning with TensorFlow participants learn to implement machine learning and deep learning applications with the open source TensorFlow framework. TensorFlow comes from Google and uses Python. With TensorFlow you can train and implement neural networks for number classification, image recognition and other problems.

TensorFlow Machine Learning

The course Machine Learning with TensorFlow starts with an overview of the basic principles of Machine Learning and an explanation of the differences of Supervised, Unsupervised and Deep Learning. The data types of TensorFlow like vectors, arrays, lists and scalars are treated and the Colab and DataBricks development environments are discussed.

Tensors

Subsequently the Machine Learning with TensorFlow course pays attention to the central Tensor Data Structure, which can be regarded as a container in which data in N dimensions can be stored. Rank, shape and type of tensors are discussed and TensorFlow operations and sessions are also treated.

Neural Networks

Special attention is given to neural networks in which both Convolutional and Recurrent Neural Networks are explained. Convolution and Pooling, making connections between Input Neurons and Hidden Layers are also discussed.

Model Visualization

The Visualization of models with TensorBoard is also part of the Machine Learning with TensorFlow course. Supervised Learning with Linear and Logistic Regression are reviewed and Ensemble techniques and Gradient Boosting are explained.

Text Processing

In addition the course Machine Learning with TensorFlow deals with Natural Language Processing with tokenization and text classification. Spam detection serves as an example and also Deep Learning is on the course schedule.

TensorFlow Optimizers

Various TensorFlow Optimizers such as Stochastic Gradient Descent, Gradient clipping and Momentum are discussed as well. And also Image Processing with Dimensionality Reduction and using the Keras APIs is covered.

Model Deployment

Finally the course Machine Learning with TensorFlow ends with a discussion of models in production. Models as REST Service and Keras Based Models are treated.

Modules Course Machine Learning with TensorFlow

Module 1 : Intro TensorFlow	Module 2 : Tensor Data Structure	Module 3 : Neural Networks
What is TensorFlow?	Arrays and Lists	What are Neural Networks?
Machine Learning	Multiple Dimensions	Convolutional Neural Networks
Supervised Learning	Rank, Shape and Type	Multiple Layers of Arrays
Unsupervised Learning	TensorFlow Dimensions	Local respective fields
Deep Learning	Tensor Manipulations	Convolution and Pooling
Install Anaconda	TensorFlow Graphs	Connecting Input Neurons
Install TensorFlow	Variables and Constants	Hidden Layers
Colab and Databricks	TensorFlow Operations	Recurrent Neural Networks
Vectors and Scalars	TensorFlow Sessions	Sequential Approach
Matrix Calculations	Placeholders	Layer Independence
Module 4 : Tensor Board	**Module 5 : Supervised Learning**	**Module 6 : Natural Language Processing**
Data Visualization	Linear Regression	NLP Overview
Data Flow Graph	Keras and TensorFlow	NLP Curves
High Level Blocks	Correlation Graph	Text Preprocessing
High Degree Nodes	Pairplot	Tokenization
Node Representations	Logistic Regression	Spam Detection
Sequence Numbered Nodes	Categorical Outcomes	Word Embeddings
Connected Nodes	Sigmoid Function	Deep Learning Model
Operation Nodes	Boosted Trees	Text Classification
Summary Nodes	Ensemble Technique	Text Processing
Reference Edge	Gradient Boosting	TensorFlow Projector
Module 7 : TensorFlow Optimizers	**Module 8 : Image Processing**	**Module 9 : Models in Production**
Stochastic Gradient Descent	Convolution Layer	Model Deployment
Gradient clipping	Pooling Layer	Isolation
Momentum	Fully Connected Layer	Collaboration
Nesterov momentum	Keras API's	Model Updates
Adagrad	ConvNets	Model Performance
Adadelta	Transfer Learning	Load Balancer
RMSProp	Autoencoders	Model as REST Service
Adam	Dimensionality Reduction	Templates
Adamax	Compression Techniques	Keras Based Models
SMORMS3	Variational Autoencoders	Flask Challenges