



Deep Learning with TensorFlow & Keras

Introduction to Deep Learning

- What Deep Learning?
- What is a neural network?
- Reasons to go Deep
- Choice of Deep Net

Neural Network

- Introduction to Artificial Neural Networks
- Feedforward Neural networks
- Backpropagation
- Activation functions
- MLP

Overview of Python Programming

- Introduction to python
- Python data types
- Functions
- Classes
- Modules

Using Numpy and Pandas

- Introduction to Numpy
- Creating N-Dimensional numpyarrays
- Array mathematics
- Slicing N-Dimensional array
- Introduction to pandas
- Working with pandasSeries
- Working with pandas Dataframe



Deep Learning Models

- Restricted Boltzmann Machines
- Deep Belief Nets
- Convolutional Networks
- Recurrent Nets
- Autoencoders
- Recursive Neural Tensor Nets

Deep Learning Software Libraries I (TensorFlow)

- Introduction to TensorFlow
- HelloWorld with TensorFlow
- Basic computation with TensorFlow

Deep Learning Software Libraries II (Keras)

- Introduction to Keras
- Keras vs TensorFlow
- Building Basic models with Keras

Convolutional Neural Networks (CNN)

- CNN History
- Understanding CNNs
- CNN Application using Keras

Recurrent Neural Networks (RNN)

- Intro to RNN Model
- Long Short-Term memory (LSTM)
- Recursive Neural Tensor Network Theory

Unsupervised Learning

- Applications of Unsupervised Learning
- Restricted Boltzmann Machine