



Machine Learning with Tensor Flow

Course Outline

Machine Learning
Data Processing
TensorFlow
Models
Convolution Neural Network
Regional CNN
Boltzmann Machine & Auto encoder
Generative Adversarial Network
Emotion & Gender Detection
RNN & GRU
Long Short Term Memory Networks
Auto Image Captioning Using CNN LSTM

Course Content

Machine Learning

Introduction
Features of Machine Learning
Approaches of ML
Techniques of ML
Applications of ML – Part A&B

Data Processing

Learning Objectives

Data Exploration Loading File A&B
Importing Data
Storing Data



Seaborn

Data Wrangling

Missing & Outlier Values in a Dataset

Data Manipulation

Typecasting

TensorFlow

Introduction

Installing TensorFlow

TensorFlow API Hierarchy

Activation Function

Layer Types

Models

Compilation Model

Optimizer Model

Loss Function Model

Training Model

Convolution Neural Network

What is Convolution?

Convolution Layer & Layer Network

Respective Fields & Dilated Convolution



Saliency Maps

Transposed Convolution

Classic & Residual Networks

Regional CNN

Selective Search Algorithm

Bounding Box Algorithm

SVM in RCNN

Pre-trained Model

Accuracy Model

Interference Time Model

Size Comparison Model

Boltzmann Machine & Auto encoder

Introduction

What is BM?

Why did RBM come into Picture?

Implementation of RBM

Distribution of BM

Understanding & Architecture of Auto encoder

Auto encoder Types

Applications

Generative Adversarial Network

Introduction

What is GAN?

GAN Working

Implementation of GAN



Types of GAN

Emotion & Gender Detection

Introduction

Where do we Use?

Architecture of Emotion Detection

Face Detection using Haar Cascade

Emotion Detection using Haar Cascade

Colab Implementation

RNN & GRU

Introduction

What is RNN?

What is GRU?

Architecture & Calculation RNN

Applications of RNN

Vanishing & Exploding Gradient

What are the Components of GRU?

Update & Reset gate



Long Short Term Memory Networks

What is LSTM?

Structure of LSTM

Forget, Input & Output gate

Architecture of LSTM

Sequence – Based Types

Sequence Prediction, Classification & Generation

LSTM Types

LSTM Vanilla

LSTM Staked

CNN LSTM

Bidirectional LSTM

Efficiency of the Model

Auto Image Captioning Using CNN LSTM

Introduction



Auto Image Captioning

COCO dataset

Pre-trained & Inception V3 Model

Inception V3 Architecture

Freeze Model

CNN for Image Processing

LSTM for Text Processing

Projects & Assignments

Our Expert trainers will provide the real time Projects & Assignments.

