

DeepLearning LEARNING

FROM BASIC TO ADVANCED



COURSE

CURRICULUM



INTRO TO DEEP LEARNING CONCEPTS

- INTRO TO DEEP LEARNING
- COMPUTATION GRAPH

INTRO TO PYTORCH

- CODING WITH PYTORCH

BASIC NEURAL NETWORKS

- NEURAL NETWORK REPRESENTATION
- ACTIVATION FUNCTIONS
- DERIVATIVES
- GRADIENT DESCENT
- BACK PROPAGATION
- RANDOM INITIALIZATION

DEEP NEURAL NETWORKS

- DEEP NEURAL NETWORKS
- FORWARD PROPAGATION
- BUILDING BLOCKS OF NEURAL NETWORK
- FORWARD AND BACKWARD
- PROPAGATION
- PARAMETERS VS HYPER PARAMETERS
- REGULARIZATION
- DROPOUT

TESTING YOUR NEURAL NETWORKS

- APPLIED DEEP LEARNING
- NORMALIZATION
- WEIGHT INITIALIZATION
- NUMERICAL APPROXIMATION
- GRADIENT CHECKING
- OPTIMIZATION ALGORITHMS

OPTIMIZATION ALGOS

- GRADIENT DESCENT
- WEIGHTED AND AVERAGE GRADIENT DESCENT
- MOMENTUM
- RMSPROP
- ADAM
- LEARNING RATE DECAY
- HYPERPARAMETER TUNING
- BATCH NORMALIZATION
- SOFTMAX REGRESSION CLASSIFIER

CONVOLUTION NEURAL NETWORKS (CNN)

- FOUNDATION OF CNN
- PADDING
- CONVOLUTIONS
- POOLING
- EXAMPLES

FAMOUS NEURAL NETWORK CNN ARCHITECTURES

- ALEXNET
- RESNET
- MOBILENET
- U-NET
- INCEPTION

Natural Language Processing

- Introduction to NLP
- Bag of words
- Skip Grams | N-Grams
- Text Representations
- Word2Vec
- Glove
- Word Embedding
- Tokenization | Stemming | Lemmatization
- NLP Pipeline
- Positional and Segment Embeddings

SEQUENCE MODELS IN DEEP LEARNING

- SEQUENCE MODELS
- NOTATION
- RECURRENT NEURAL NETWORKS
- BACK PROPAGATION WITH TIME
- PROBLEMS WITH RNN
- LSTM NETWORKS
- GRU NETWORKS
- TRANSFORMER NETWORKS
- BEAM SEARCH
- TRIGGER WORD DETECTION
- SPEECH RECOGNITION
- BERT MODEL

WHAT COMES NEXT ?
