adHOC neTWORKS

WINTER INDUSTRIAL TRAINING/INTERNSHIP 2019

BASH 99-19 Advanced Artificial Intelligence & Neural Networks
Duration: 30 Days

Tensorflow:

- What is TensorFlow and its use cases
- TensorFlow Basics: Tensor, Shape, Type, Graph, Sessions & Operators
- TensorBoard Tutorial: Graph Visualization with Example
- Linear Regression with TensorFlow
- Linear Classifier in TensorFlow
- TensorFlow ANN
- ConvNet(Convolutional Neural Network): TensorFlow Image Classification
- Autoencoder in Deep Learning: TensorFlow Example
- RNN in TensorFlow
- Introduction to TensorFlow 2.0
- Overfitting
- Gradient descent
- Perceptrons and Activation Functions
- CNN Use Cases
- RNN Use Cases

Keras:

Module 1 - Introduction to Deep Learning

- Introduction to Deep Learning
- Biological Neural Networks
- Artificial Neural Networks - Forward Propagation

Module 2 - Artificial Neural Networks

- Gradient Descent
- Backpropagation
- Vanishing Gradient
- Activation Functions

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Module 3 - Deep Learning Libraries
- Introduction to Deep Learning Libraries
- Regression Models with Keras
- Classification Models with Keras

Module 4 - Deep Learning Models
- Shallow and Deep Neural Networks
- Convolutional Neural Networks
- Recurrent Neural Networks
- Autoencoders

Pytorch: Deep Learning Framework:

Module 1 – Introduction to Pytorch
- What's Deep Learning and why Pytorch
- 1-D Tensors and useful Pytoch Functions
- 2-D Tensors and useful functions
- Derivatives and Graphs in Pytorch
- Data Loader

Module 2 – Linear Regression
- Prediction 1D Regression
- Training 1D Regression
- Stochastic Gradient Descent, Mini-Batch Gradient Descent
- Train, Test, Split and Early Stopping
- Pytorch way
- Multiple Linear Regression

Module 3 - Classification
- Logistic Regression
- Training Logistic Regressions Part 1
- Training Logistic Regressions Part 2
- Softmax Regression

Module 4 - Neural Networks

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- Introduction to Networks
- Network Shape Depth vs Width
- Back Propagation
- Activation Functions

Module 5 - Deep Networks
- Dropout
- Initialization
- Batch Normalization
- Other Optimization Methods

AWS Machine Learning Model:
- AWS Recognition
- AWS Poly
- AWS Recognition API
- AWS LEX
- AWS Translate
- AWS Sage Maker
- Advanced Computer Vision

NLP Advanced and Chatbots
- NLP Used Case
- Nltk and Spacy
- Text Summarization
- Recommendation System
- Chatbots Framework
- IOT Integration

Advanced Computer Vision:
- CNN Implementation
- TensorFlow JS
- Images Classification