NPTEL Video Course - Computer Science and Engineering - NOC:Machine Learning for Engineering and Science Appl

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Co-ordinating Institute - IIT - Madras

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 30 - Gradient Descent Algorithms
Lecture 31 - Introduction to Week 5 (Deep Learning)
Lecture 32 - Logistic Regression
Lecture 33 - Binary Entropy cost function
Lecture 34 - OR Gate Via Classification
Lecture 35 - NOR, AND, NAND Gates
Lecture 36 - XOR Gate
Lecture 37 - Differentiating the sigmoid
Lecture 38 - Gradient of logistic regression
Lecture 39 - Code for Logistic Regression
Lecture 40 - Multinomial Classification - Introduction
Lecture 41 - Multinomial Classification - One Hot Vector
Lecture 42 - Multinomial Classification - Softmax
Lecture 43 - Schematic of multinomial logistic regression
Lecture 44 - Biological neuron
Lecture 45 - Structure of an Artificial Neuron
Lecture 46 - Feedforward Neural Network
Lecture 47 - Introduction to back prop
Lecture 48 - Summary of Week 05
Lecture 49 - Introduction to Convolution Neural Networks (CNN)
Lecture 50 - Types of convolution
Lecture 51 - CNN Architecture Part 1 (LeNet and Alex Net)
Lecture 52 - CNN Architecture Part 2 (VGG Net)
Lecture 53 - CNN Architecture Part 3 (GoogleNet)
Lecture 54 - CNN Architecture Part 4 (ResNet)
Lecture 55 - CNN Architecture Part 5 (DenseNet)
Lecture 56 - Train Network for Image Classification
Lecture 57 - Semantic Segmentation
Lecture 58 - Hyperparameter optimization
Lecture 59 - Transfer Learning
Lecture 60 - Segmentation of Brain Tumors from MRI using Deep Learning
Lecture 61 - Activation Functions
Lecture 62 - Learning Rate decay, Weight initialization
Lecture 63 - Data Normalization
Lecture 64 - Batch Norm
Lecture 65 - Introduction to RNNs
Lecture 66 - Example - Sequence Classification
Lecture 67 - Training RNNs - Loss and BPTT
Lecture 68 - Vanishing Gradients and TBPTT

Lecture 69 - RNN Architectures
Lecture 70 - LSTM
Lecture 71 - Why LSTM Works
Lecture 72 - Deep RNNs and Bi- RNNs
Lecture 73 - Summary of RNNs
Lecture 74 - Introduction.
Lecture 75 - Knn
Lecture 76 - Binary decision trees
Lecture 77 - Binary regression trees
Lecture 78 - Bagging
Lecture 79 - Random Forest
Lecture 80 - Boosting
Lecture 81 - Gradient boosting
Lecture 82 - Unsupervised learning and Kmeans
Lecture 83 - Agglomerative clustering
Lecture 84 - Probability Distributions- Gaussian, Bernoulli
Lecture 85 - Covariance Matrix of Gaussian Distribution
Lecture 86 - Central Limit Theorem
Lecture 87 - NaÃ Â¨ve Bayes
Lecture 88 - MLE Intro
Lecture 89 - PCA - Part 1
Lecture 90 - PCA - Part 2
Lecture 91 - Support Vector Machines
Lecture 92 - MLE, MAP and Bayesian Regression
Lecture 93 - Introduction to Generative model
Lecture 94 - Generative Adversarial Networks (GAN)
Lecture 95 - Variational Auto-encoders (VAE)
Lecture 96 - Applications
Lecture 97 - Applications
Lecture 98 - Introduction to Week 12
Lecture 99 - Application 1 description - Fin Heat Transfer
Lecture 100 - Application 1 solution
Lecture 101 - Application 2 description - Computational Fluid Dynamics
Lecture 102 - Application 2 solution
Lecture 103 - Application 3 description - Topology Optimization
Lecture 104 - Application 3 solution
Lecture 105 - Application 4 Solution of PDE/ODE using Neural Networks
Lecture 106 - Summary and road ahead