NPTEL Video Course - Electrical Engineering - NOC:Deep Learning For Visual Computing

Subject Co-ordinator - Prof. Debdoot Sheet

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction to Visual Computing
Lecture 2 - Feature Extraction for Visual Computing
Lecture 3 - Feature Extraction with Python
Lecture 4 - Neural Networks for Visual Computing
Lecture 5 - Classification with Perceptron Model
Lecture 6 - Introduction to Deep Learning with Neural Networks
Lecture 7 - Introduction to Deep Learning with Neural Networks
Lecture 8 - Multilayer Perceptron and Deep Neural Networks
Lecture 9 - Multilayer Perceptron and Deep Neural Networks
Lecture 10 - Classification with Multilayer Perceptron
Lecture 11 - Autoencoder for Representation Learning and MLP Initialization
Lecture 12 - MNIST handwritten digits classification using autoencoders
Lecture 13 - Fashion MNIST classification using autoencoders
Lecture 14 - ALL-IDB Classification using autoencoders
Lecture 15 - Retinal Vessel Detection using autoencoders
Lecture 16 - Stacked Autoencoders
Lecture 17 - MNIST and Fashion MNIST with Stacked Autoencoders
Lecture 18 - Denoising and Sparse Autoencoders
Lecture 19 - Sparse Autoencoders for MNIST classification
Lecture 20 - Denoising Autoencoders for MNIST classification
Lecture 21 - Cost Function
Lecture 22 - Classification cost functions
Lecture 23 - Optimization Techniques and Learning Rules
Lecture 24 - Gradient Descent Learning Rule
Lecture 25 - SGD and ADAM Learning Rules
Lecture 26 - Convolutional Neural Network Building Blocks
Lecture 27 - Simple CNN Model
Lecture 28 - LeNet Definition
Lecture 29 - Training a LeNet for MNIST Classification

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Lecture 30 - Modifying a LeNet for CIFAR
Lecture 31 - Convolutional Autoencoder and Deep CNN
Lecture 32 - Convolutional Autoencoder for Representation Learning
Lecture 33 - AlexNet
Lecture 34 - VGGNet
Lecture 35 - Revisiting AlexNet and VGGNet for Computational Complexity
Lecture 36 - GoogLeNet - Going very deep with convolutions
Lecture 37 - GoogLeNet
Lecture 38 - ResNet - Residual Connections within Very Deep Networks and DenseNet - Densely connected network
Lecture 39 - ResNet
Lecture 40 - DenseNet
Lecture 41 - Space and Computational Complexity in DNN
Lecture 42 - Assessing the space and computational complexity of very deep CNNs
Lecture 43 - Domain Adaptation and Transfer Learning in Deep Neural Networks
Lecture 44 - Transfer Learning a GoogLeNet
Lecture 45 - Transfer Learning a ResNet
Lecture 46 - Activation pooling for object localization
Lecture 47 - Region Proposal Networks (rCNN and Faster rCNN)
Lecture 48 - GAP + rCNN
Lecture 49 - Semantic Segmentation with CNN
Lecture 50 - UNet and SegNet for Semantic Segmentation
Lecture 51 - Autoencoders and Latent Spaces
Lecture 52 - Principle of Generative Modeling
Lecture 53 - Adversarial Autoencoders
Lecture 54 - Adversarial Autoencoder for Synthetic Sample Generation
Lecture 55 - Adversarial Autoencoder for Classification
Lecture 56 - Understanding Video Analysis
Lecture 57 - Recurrent Neural Networks and Long Short-Term Memory
Lecture 58 - Spatio-Temporal Deep Learning for Video Analysis
Lecture 59 - Activity recognition using 3D-CNN
Lecture 60 - Activity recognition using CNN-LSTM
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