

NPTEL Video Lecture Topic List - Created by Linuxpert Systems, Chennai

NPTEL Video Course - Computer Science and Engineering - NOC:Deep Learning for Computer Vision

Subject Co-ordinator - Prof. Vineeth N Balasubramanian

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Course Introduction
Lecture 2 - History
Lecture 3 - Image Formation
Lecture 4 - Image Representation
Lecture 5 - Linear Filtering
Lecture 6 - Image in Frequency Domain
Lecture 7 - Image Sampling
Lecture 8 - Edge Detection
Lecture 9 - From Edges to Blobs and Corners
Lecture 10 - Scale Space, Image Pyramids and Filter Banks
Lecture 11 - Feature Detectors
Lecture 12 - Image Segmentation
Lecture 13 - Other Feature Spaces
Lecture 14 - Human Visual System
Lecture 15 - Feature Matching
Lecture 16 - Hough Transform
Lecture 17 - From Points to Images
Lecture 18 - Image Descriptor Matching
Lecture 19 - Pyramid Matching
Lecture 20 - From Traditional Vision to Deep Learning
Lecture 21 - Neural Networks
Lecture 22 - Neural Networks
Lecture 23 - Feedforward Neural Networks and Backpropagation - Part 1
Lecture 24 - Feedforward Neural Networks and Backpropagation - Part 2
Lecture 25 - Gradient Descent and Variants - Part 1
Lecture 26 - Gradient Descent and Variants - Part 2
Lecture 27 - Regularization in Neural Networks - Part 1
Lecture 28 - Regularization in Neural Networks - Part 2
Lecture 29 - Improving Training of Neural Networks - Part 1

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- Lecture 30 - Improving Training of Neural Networks - Part 2
- Lecture 31 - Convolutional Neural Networks
- Lecture 32 - Convolutional Neural Networks
- Lecture 33 - Backpropagation in CNNs
- Lecture 34 - Evolution of CNN Architectures for Image Classification - Part 1
- Lecture 35 - Evolution of CNN Architectures for Image Classification - Part 2
- Lecture 36 - Recent CNN Architectures
- Lecture 37 - Finetuning in CNNs
- Lecture 38 - Explaining CNNs
- Lecture 39 - Explaining CNNs
- Lecture 40 - Explaining CNNs
- Lecture 41 - Explaining CNNs
- Lecture 42 - Explaining CNNs
- Lecture 43 - Going Beyond Explaining CNNs
- Lecture 44 - CNNs for Object Detection-I - Part 1
- Lecture 45 - CNNs for Object Detection-I - Part 2
- Lecture 46 - CNNs for Object Detection-II
- Lecture 47 - CNNs for Segmentation
- Lecture 48 - CNNs for Human Understanding
- Lecture 49 - CNNs for Human Understanding
- Lecture 50 - CNNs for Human Understanding
- Lecture 51 - CNNs for Other Image Tasks
- Lecture 52 - Recurrent Neural Networks
- Lecture 53 - Backpropagation in RNNs
- Lecture 54 - LSTMs and GRUs
- Lecture 55 - Video Understanding using CNNs and RNNs
- Lecture 56 - Attention in Vision Models
- Lecture 57 - Vision and Language
- Lecture 58 - Beyond Captioning
- Lecture 59 - Other Attention Models
- Lecture 60 - Self-Attention and Transformers
- Lecture 61 - Deep Generative Models
- Lecture 62 - Generative Adversarial Networks - Part 1
- Lecture 63 - Generative Adversarial Networks - Part 2
- Lecture 64 - Variational Autoencoders
- Lecture 65 - Combining VAEs and GANs
- Lecture 66 - Beyond VAEs and GANs
- Lecture 67 - Beyond VAEs and GANs
- Lecture 68 - GAN Improvements

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- Lecture 69 - Deep Generative Models across Multiple Domains
- Lecture 70 - VAEs and Disentanglement
- Lecture 71 - Deep Generative Models
- Lecture 72 - Deep Generative Models
- Lecture 73 - Few-shot and Zero-shot Learning - Part 1
- Lecture 74 - Few-shot and Zero-shot Learning - Part 2
- Lecture 75 - Self-Supervised Learning
- Lecture 76 - Adversarial Robustness
- Lecture 77 - Pruning and Model Compression
- Lecture 78 - Neural Architecture Search
- Lecture 79 - Course Conclusion