

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

NPTEL Video Course - Biotechnology - NOC:Medical Image Analysis

Subject Co-ordinator - Prof. Ganapathy Krishnamurthi

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Medical Image Analysis - Introduction
Lecture 2 - X-ray imaging
Lecture 3 - MRI Physics
Lecture 4 - Magnetic Resonance Image Acquisition
Lecture 5 - Ultrasound Imaging
Lecture 6 - Radionuclide Imaging
Lecture 7 - Basic Image Processing Methods
Lecture 8 - Contrast Enhancement
Lecture 9 - Histogram Equalization
Lecture 10 - Edge Enhancement - Laplacian
Lecture 11 - Noise Reduction
Lecture 12 - Diffusion Filtering
Lecture 13 - Bayesian Image Restoration
Lecture 14 - Registration Introduction
Lecture 15 - Framework
Lecture 16 - Image Coordinates
Lecture 17 - Transforms
Lecture 18 - Metrics
Lecture 19 - NonRigid Registration
Lecture 20 - Demons part - 1
Lecture 21 - Demons part - 2
Lecture 22 - FFDBSplines
Lecture 23 - Endoscopy - Where are we with AI ?
Lecture 24 - Computer vision and DL in the operating room
Lecture 25 - ML in intraoperative tissue identification
Lecture 26 - Basic Image Processing Techniques Using MATLAB
Lecture 27 - Image Registration Using Matlab
Lecture 28 - Basic Image Processing Techniques Using Python
Lecture 29 - Calculus of variations

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- Lecture 30 - Snakes - Active Contour Models
- Lecture 31 - Level Sets, Geodesic Active Contours, Mumford-Shah Functional, Chan-Vese
- Lecture 32 - Mumford-Shah Functional, Chan-Vese
- Lecture 33 - Segmentation Models Demo [Snakes (Active Contours) Chan-Vese segmentation, Geodesic active Cont
- Lecture 34 - Active Shape Models
- Lecture 35 - Snake tutorial
- Lecture 36 - Level Set Method
- Lecture 37 - Chan Vese Segmentation
- Lecture 38 - Neural Networks Introduction
- Lecture 39 - Linear Regression
- Lecture 40 - Gradient Descent Formulation
- Lecture 41 - Linear Regression Demo
- Lecture 42 - Feed forward neural Networks
- Lecture 43 - Example with XOR
- Lecture 44 - Introduction to CNNs
- Lecture 45 - Max Pooling
- Lecture 46 - Applications of Cnns
- Lecture 47 - CNN Training
- Lecture 48 - Semantic Segmentation
- Lecture 49 - Classification Demo in Pytorch
- Lecture 50 - Generative Models
- Lecture 51 - GAN Final Demo