NPTEL Video Course - Electronics and Communication Engineering - NOC:Signal Processing Techniques and its App

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Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction
Lecture 2 - Signal and its Types
Lecture 3 - Characteristics of a Signal
Lecture 4 - Digitization of Signal
Lecture 5 - Digitization of Signal (Continued...)
Lecture 6 - Concept of Frequency in Continuous-time and Discrete-time Signal
Lecture 7 - Tutorial 1
Lecture 8 - Discrete Time Signal
Lecture 9 - Discrete Time System
Lecture 10 - D.T.S (L.T.I System)
Lecture 11 - Linear Time-Invariant Systems (Continued...)
Lecture 12 - Correlation
Lecture 13 - Tutorial 02
Lecture 14 - Z-Transform
Lecture 15 - Z-Transform Properties
Lecture 16 - Pole and Zero in Z-Transform
Lecture 17 - Inverse Z-Transform
Lecture 18 - Frequency-Domain Representation of Discrete Signals and L.T.I Systems
Lecture 19 - Discrete Fourier Transform (DFT)
Lecture 20 - Discrete Fourier Transform Linear Transform View
Lecture 21 - Discrete Fourier Transform Linear Transform View (Continued...)
Lecture 22 - Properties of Discrete Fourier Transform
Lecture 23 - Properties of Discrete Fourier Transform (Continued...)
Lecture 24 - Properties of Discrete Fourier Transform (Continued...)
Lecture 25 - Properties of Discrete Fourier Transform (Continued...)
Lecture 26 - Linear Filtering
Lecture 27 - Tutorial 5
Lecture 28 - Two Dimensional Discrete Fourier Transform
Lecture 29 - Discrete Cosine Transform

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Lecture 30 - Frequency analysis of long signal using DFT
Lecture 31 - Short-Time Fourier Transform (STFT)
Lecture 32 - STFT Synthesis
Lecture 33 - Fast Fourier Transform (FFT) Algorithms
Lecture 34 - Fast Fourier Transform (FFT) Algorithms (Continued...)
Lecture 35 - Radix-2 FFT Algorithms
Lecture 36 - Radix-2 FFT Algorithms (Continued...)
Lecture 37 - Spectrum and spectrogram
Lecture 38 - Digital Filter
Lecture 39 - FIR Filter
Lecture 40 - Linear Symmetric and Anti-symmetric filter
Lecture 41 - FIR Filter Design
Lecture 42 - Frequency Sampling Method
Lecture 43 - Design Optimum equiripple Linear-Phase FIR Filters (optimization methods)
Lecture 44 - Infinite Impulse Response (IIR) Filters
Lecture 45 - Traditional Analog Filter Design
Lecture 46 - Chebyshev filter Design Method
Lecture 47 - Analogue filter to digital filter transformation
Lecture 48 - Linear Prediction and Optimum Linear Filters
Lecture 49 - Autocorrelation Method for Linear Prediction
Lecture 50 - Covariance Method for Linear Prediction
Lecture 51 - Lattice Formulations of Linear Prediction
Lecture 52 - Lattice Formulations of Linear Prediction (Continued....)
Lecture 53 - Introduction to Multirate Signal Processing
Lecture 54 - Analysis of Decimation and Interpolation
Lecture 55 - Fractional Rate Conversion
Lecture 56 - Implementations of Decimator and Interpolator
Lecture 57 - Sample Rate Conversion by Stages
Lecture 58 - Power Spectrum Estimation
Lecture 59 - Power Spectrum Estimation (Continued...)
Lecture 60 - Tutorial 6: Tutorial for Final Examination
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