NPTEL Video Course - Electronics and Communication Engineering - NOC:Discrete Time Signal Processing

Subject Co-ordinator - Prof. Mrityunjoy Chakraborty

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction
Lecture 2 - Discrete Time Signals and Systems
Lecture 3 - Linear, Shift Invariant Systems
Lecture 4 - Properties of Discrete Convolution Causal and Stable Systems
Lecture 5 - Graphical Evaluation of Discrete Convolutions
Lecture 6 - Discrete Time Fourier Transform
Lecture 7 - Properties of DTFT
Lecture 8 - Dirac Comb and Sampling Analog Signals
Lecture 9 - Relation between DTFT and Analog Fourier Transform
Lecture 10 - Nyquist Interpolation Formula
Lecture 11 - Rational Systems
Lecture 12 - Properties of Rational Systems
Lecture 13 - Introduction to Z-transform
Lecture 14 - Properties of Z-transform
Lecture 15 - Properties of z-transform
Lecture 16 - Inverse z-transform
Lecture 17 - Introduction to DFT
Lecture 18 - Properties of DFT
Lecture 19 - Introduction to Interpretation of Circular Convolution
Lecture 20 - Graphically Interpretation of Circular Convolution
Lecture 21 - Zero Padding and Linear convolution Via DFT
Lecture 22 - Decimation and DFT of Decimated Sequences
Lecture 23 - Expension and Interpolation of Sequences
Lecture 24 - Factor-of-M Polyphase Decomposition of Sequences
Lecture 25 - Nobel Identifies
Lecture 26 - Efficient Decimator and Interpolator Structure
Lecture 27 - Linear Phase Filters
Lecture 28 - Properties of Linear Phase Filters
Lecture 29 - Structures for IIR Filters

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Lecture 30 - Structures for FIR Filters
Lecture 31 - Analog LTI Systems, Fourier and Laplace Transforms
Lecture 32 - Pole, Zero and Stability of of Analog Filters
Lecture 33 - Analog Filter Design Example Butterworth Lowpass Filter
Lecture 34 - IIR Filter Design by Implus Invariance Method
Lecture 35 - Design Filter Design from Analog Proptotype Filters by s-z Transformations
Lecture 36 - Bilinear Transformation
Lecture 37 - FIR Filter Design by Window
Lecture 38 - FFT
Lecture 39 - Complexity Analysis of FFT
Lecture 40 - Bit Reversal and FFT
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