

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

NPTEL Video Course - Electrical Engineering - NOC:VLSI Signal Processing

Subject Co-ordinator - Prof. Mrityunjay Chakraborty

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Graphical Representation of Signals
Lecture 2 - Signal Flow Graph
Lecture 3 - Data Flow Graph, Critical Path
Lecture 4 - Dependence Graph, Basics of Retiming
Lecture 5 - Retiming Theorem
Lecture 6 - Forward Path and Loop Retiming
Lecture 7 - Loop Bound and Iteration Bound
Lecture 8 - Cutset Retiming
Lecture 9 - Retiming IIR Filters
Lecture 10 - Adaptive Filter Basics (LMS Algorithm)
Lecture 11 - Retiming LMS
Lecture 12 - Retiming Delayed LMS
Lecture 13 - Parallel Processing in DSP by Unfolding
Lecture 14 - Basic Unfolding Relation
Lecture 15 - Retiming for Unfolding
Lecture 16 - Loop Unfolding
Lecture 17 - Iteration bound for Loops
Lecture 18 - Bitserial, Digit serial and Word serial Structures
Lecture 19 - Unfolding a Switch
Lecture 20 - Unfolding Bit Serial Systems
Lecture 21 - Folding of DFG
Lecture 22 - Folding Examples - IIR Filter
Lecture 23 - Retiming for Folding
Lecture 24 - Introduction to Delay Optimization by Folding
Lecture 25 - Life Time Analysis of Storage Variables
Lecture 26 - Forward Backward Data Allocation
Lecture 27 - Life Time Analysis of Storage Variables in a Digital Filter
Lecture 28 - Delay Folded Realization of a Digital Filter
Lecture 29 - Polyphase Decomposition of Sequences

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- Lecture 30 - Hardware Efficient 2 - Parallel FIR Filters
- Lecture 31 - Hardware Efficient 3 - Parallel FIR Filters
- Lecture 32 - Introduction to First Level Architectures
- Lecture 33 - 2's Complement Number Systems
- Lecture 34 - Multiplication of Two Binary Numbers
- Lecture 35 - Carry Ripple and Carry Save Array
- Lecture 36 - Bit Serial Multipliers
- Lecture 37 - Bit Serial Digital Filters
- Lecture 38 - Baugh Wooley Multiplier
- Lecture 39 - Distributed Arithmetic