

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

NPTEL Video Course - Computer Science and Engineering - NOC:C-Based VLSI Design

Subject Co-ordinator - Prof. Chandan Karfa

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Introduction to C-Based VLSI Design
Lecture 2 - C-based VLSI Design: An Overview
Lecture 3 - C-based VLSI Design: Problem Formulation
Lecture 4 - C-based VLSI Design: Course Plan
Lecture 5 - Introduction to Scheduling
Lecture 6 - ILP formulation of Scheduling
Lecture 7 - ILP formulation of MRLC and MLRC Scheduling
Lecture 8 - Multiprocessor Scheduling
Lecture 9 - Hu's algorithm for Multiprocessor Scheduling
Lecture 10 - List based Scheduling of MLRC
Lecture 11 - List based Scheduling of MRLC
Lecture 12 - Forced Directed Scheduling
Lecture 13 - Forced Directed MLRC and MRLC Scheduling Algorithm
Lecture 14 - Path Based Scheduling
Lecture 15 - Path Based Scheduling
Lecture 16 - Allocation and Binding Problem Formulation
Lecture 17 - Left Edge Algorithm
Lecture 18 - ILP Formulation of Allocation and Binding
Lecture 19 - Allocation and Binding for Hierarchical Graph
Lecture 20 - Register Allocation and Binding
Lecture 21 - Multi-port Binding Problem
Lecture 22 - Datapath and Controller Synthesis
Lecture 23 - HLS for Arrays
Lecture 24 - HLS for Loops
Lecture 25 - HLS for Loop - pipeline
Lecture 26 - Hardware Efficient C Coding - Part I
Lecture 27 - Hardware Efficient C Coding - Part II
Lecture 28 - Dataflow Optimization in HLS
Lecture 29 - Frontend Optimizations in C

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- Lecture 30 - HLS Optimizations: Case Study 1
- Lecture 31 - HLS Optimizations: Case Study 1
- Lecture 32 - Simulation based Verification
- Lecture 33 - RTL to C Reverse Engineering
- Lecture 34 - Phase-wise Verification of HLS
- Lecture 35 - Equivalence between C and RTL
- Lecture 36 - HLS for Security
- Lecture 37 - Introduction to Hardware Security
- Lecture 38 - Attacks on RTL Logic locking
- Lecture 39 - Introduction to Logic Synthesis
- Lecture 40 - FPGA Technology Mapping
- Lecture 41 - Introduction to Physical Synthesis
- Lecture 42 - Introduction to Circuit optimizations
- Lecture 43 - Recent Advances in C-Based VLSI Design