NPTEL Video Course - Computer Science and Engineering - NOC:Computer Architecture and Organization

Subject Co-ordinator - Prof. Indranil Sengupta, Prof. Kamalika Datta

Co-ordinating Institute - IIT - Kharagpur

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


Lecture 1 - Evolution of Computer Systems
Lecture 2 - Basic Operation of a Computer
Lecture 3 - Memory Addressing and Languages
Lecture 4 - Software and Architecture Types
Lecture 5 - Instruction Set Architecture
Lecture 6 - Number Representation
Lecture 7 - Instruction Format and Addressing Modes
Lecture 8 - CISC and RISC Architecture
Lecture 9 - MIPS32 Instruction Set
Lecture 10 - MIPS Programming Examples
Lecture 11 - Spim â  A Mips32 Simulator
Lecture 12 - Measuring Cpu Performance
Lecture 13 - Choice Of Benchmarks
Lecture 14 - Summarizing Performance Results
Lecture 15 - Amadahlâ s Law - Part 1
Lecture 16 - Amadahlâ s Law - Part 2
Lecture 17 - Design Of Control Unit - Part 1
Lecture 18 - Design Of Control Unit - Part 2
Lecture 19 - Design Of Control Unit - Part 3
Lecture 20 - Design Of Control Unit - Part 4
Lecture 21 - Mips Implementation - Part 1
Lecture 22 - Mips Implementation - Part 2
Lecture 23 - Processor Memory Interaction
Lecture 24 - Static And Dynamic Ram
Lecture 25 - Asynchronous Dram
Lecture 26 - Synchronous Dram
Lecture 27 - Memory Interfacing And Addressing
Lecture 28 - Memory Hierarchy Design - Part 1
Lecture 29 - Memory Hierarchy Design - Part 2

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Lecture 30 - Cache Memory - Part 1
Lecture 31 - Cache Memory - Part 2
Lecture 32 - Improving Cache Performance
Lecture 33 - Design Of Adders - Part 1
Lecture 34 - Design Of Adders - Part 2
Lecture 35 - Design Of Multipliers - Part 1
Lecture 36 - Design Of Multipliers - Part 2
Lecture 37 - Design Of Dividers
Lecture 38 - Floating-Point Numbers
Lecture 39 - Floating-Point Arithmetic
Lecture 40 - Basic Pipelining Concepts
Lecture 41 - Pipeline Scheduling
Lecture 42 - Arithmetic Pipeline
Lecture 43 - Secondary Storage Devices
Lecture 44 - Input-Output Organization
Lecture 45 - Data Transfer Techniques
Lecture 46 - Interrupt Handling - Part 1
Lecture 47 - Interrupt Handling - Part 2
Lecture 48 - Direct Memory Access
Lecture 49 - Some Example Device Interfacing
Lecture 50 - Exercises On I/O Transfer
Lecture 51 - Bus Standards
Lecture 52 - Bus Standards
Lecture 53 - Pipelining The Mips32 Data Path
Lecture 54 - Mips Pipeline (Continued...
Lecture 55 - Pipeline Hazards - Part 1
Lecture 56 - Pipeline Hazards - Part 2
Lecture 57 - Pipeline Hazards - Part 3
Lecture 58 - Pipeline Hazards - Part 4
Lecture 59 - Multicycle Operations In Mips32
Lecture 60 - Exploiting Instruction Level Parallelism
Lecture 61 - Vector Processors
Lecture 62 - Multi-Core Processors
Lecture 63 - Some Case Studies
Lecture 64 - Summarization Of The Course
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