

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

NPTEL Video Course - Computer Science and Engineering - NOC:Introduction to Parallel Programming in OpenMP

Subject Co-ordinator - Dr. Yogish Sabharwal

Co-ordinating Institute - IIT - Delhi

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

- Lecture 1 - Introduction to Parallel Programming
- Lecture 2 - Parallel Architectures and Programming Models
- Lecture 3 - Pipelining
- Lecture 4 - Superpipelining and VLIW
- Lecture 5 - Memory Latency
- Lecture 6 - Cache and Temporal Locality
- Lecture 7 - Cache, Memory bandwidth and Spatial Locality
- Lecture 8 - Intuition for Shared and Distributed Memory architectures
- Lecture 9 - Shared and Distributed Memory architectures
- Lecture 10 - Interconnection networks in Distributed Memory architectures
- Lecture 11 - OpenMP
- Lecture 12 - Program with Single thread
- Lecture 13 - Program Memory with Multiple threads and Multi-tasking
- Lecture 14 - Context Switching
- Lecture 15 - OpenMP
- Lecture 16 - OpenMP
- Lecture 17 - Shared Memory Consistency Models and the Sequential Consistency Model
- Lecture 18 - Race Conditions
- Lecture 19 - OpenMP
- Lecture 20 - OpenMP
- Lecture 21 - Computing sum
- Lecture 22 - Manual distribution of work and critical sections
- Lecture 23 - Distributing for loops and reduction
- Lecture 24 - Vector-Vector operations (Dot product)
- Lecture 25 - Matrix-Vector operations (Matrix-Vector Multiply)
- Lecture 26 - Matrix-Matrix operations (Matrix-Matrix Multiply)
- Lecture 27 - Introduction to tasks
- Lecture 28 - Task queues and task execution
- Lecture 29 - Accessing variables in tasks

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- Lecture 30 - Completion of tasks and scoping variables in tasks
- Lecture 31 - Recursive task spawning and pitfalls
- Lecture 32 - Understanding LU Factorization
- Lecture 33 - Parallel LU Factorization
- Lecture 34 - Locks
- Lecture 35 - Advanced Task handling
- Lecture 36 - Matrix Multiplication using tasks
- Lecture 37 - The OpenMP Shared Memory Consistency Model