

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

NPTEL Video Course - Computer Science and Engineering - NOC:Algorithms for Big Data

Subject Co-ordinator - Prof. John Augustine

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Basic definitions
- Lecture 2 - Conditional probability
- Lecture 3 - Example problems
- Lecture 4 - Karger's mincut algorithm
- Lecture 5 - Analysis of Karger's mincut algorithm
- Lecture 6 - Random variables
- Lecture 7 - Randomized quicksort
- Lecture 8 - Problem solving video - The rich get richer
- Lecture 9 - Problem solving video - Monty Hall problem
- Lecture 10 - Bernoulli, Binomial and Geometric distributions
- Lecture 11 - Tail Bounds
- Lecture 12 - Application of Chernoff bound
- Lecture 13 - Application of Chebyshev's inequality
- Lecture 14 - Intro to Big Data Algorithms
- Lecture 15 - SAT Problem
- Lecture 16 - Classification of States
- Lecture 17 - Stationary Distribution of a Markov Chain
- Lecture 18 - Celebrities Case Study
- Lecture 19 - Random Walks on Undirected Graphs
- Lecture 20 - Intro to Streaming, Morris Algorithm
- Lecture 21 - Reservoir Sampling
- Lecture 22 - Approximate Median
- Lecture 23 - Overview
- Lecture 24 - Balls, bins, hashing
- Lecture 25 - Chain hashing, SUHA, Power of Two choices
- Lecture 26 - Bloom filter
- Lecture 27 - Pairwise independence
- Lecture 28 - Estimating expectation of continuous function
- Lecture 29 - Universal hash functions

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- Lecture 30 - Perfect hashing
- Lecture 31 - Count-min filter for heavy hitters in data streams
- Lecture 32 - Problem solving video - Doubly Stochastic Transition Matrix
- Lecture 33 - Problem solving video - Random Walks on Linear Structures
- Lecture 34 - Problem solving video - Lollipop Graph
- Lecture 35 - Problem solving video - Cat And Mouse
- Lecture 36 - Estimating frequency moments
- Lecture 37 - Property testing framework
- Lecture 38 - Testing Connectivity
- Lecture 39 - Enforce and Test Introduction
- Lecture 40 - Testing if a graph is a biclique
- Lecture 41 - Testing bipartiteness
- Lecture 42 - Property testing and random walk algorithms
- Lecture 43 - Testing if a graph is bipartite (using random walks)
- Lecture 44 - Graph streaming algorithms: Introduction
- Lecture 45 - Graph streaming algorithms: Matching
- Lecture 46 - Graph streaming algorithms: Graph sparsification
- Lecture 47 - MapReduce
- Lecture 48 - K-Machine Model (aka Pregel Model)