

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

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- Lecture 30 - Lesson 2 - Perfect hashing
- Lecture 31 - Lesson 3 - 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 - Lesson 1 - Estimating frequency moments
- Lecture 37 - Lesson 2 - Property testing framework
- Lecture 38 - Lesson 3 - Testing Connectivity
- Lecture 39 - Lesson 4 - Enforce & Test Introduction
- Lecture 40 - Lesson 5 - Testing if a graph is a biclique
- Lecture 41 - Lesson 6 - Testing bipartiteness
- Lecture 42 - Lesson 1 - Property testing and random walk algorithms
- Lecture 43 - Lesson 2 - Testing if a graph is bipartite (using random walks)
- Lecture 44 - Lesson 3 - Graph streaming algorithms
- Lecture 45 - Lesson 4 - Graph streaming algorithms
- Lecture 46 - Lesson 5 - Graph streaming algorithms
- Lecture 47 - Lesson 1 - MapReduce
- Lecture 48 - Lesson 2 - K-Machine Model (aka Pregel Model)