NPTEL Video Course - Computer Science and Engineering - NOC:Probability for Computer Science

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Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introductory examples
Lecture 2 - Examples and Course outline
Lecture 3 - Probability over discrete space
Lecture 4 - Inclusion-Exclusion principle
Lecture 5 - Probability over infinite space
Lecture 6 - Conditional probability, Partition formula
Lecture 7 - Independent events, Bayes theorem
Lecture 8 - Fallacies, Random variables
Lecture 9 - Expection
Lecture 10 - Conditional Expectation
Lecture 11 - Important Random Variables
Lecture 12 - Continuous Random Variables
Lecture 13 - Equality Checking, Poisson Distribution
Lecture 14 - Concentration Inequivalities, Variance
Lecture 15 - Weak Linearity of Variance, Law of Large Numbers
Lecture 16 - Chernoff's Bound. K-wise Independence
Lecture 17 - Union and Factorial Estimates
Lecture 18 - Stochastic Process: Markov Chains
Lecture 19 - Drunkard's walk, Evolution of Markov Chains
Lecture 20 - Stationary Distribution
Lecture 21 - Perron-Frobenius Theorem, Page Rank Algorithm
Lecture 22 - Page Rank Algorithm: Ergodicity
Lecture 23 - Cell Genetics
Lecture 24 - Random Sampling
Lecture 25 - Biased Coin Tosses, Hashing
Lecture 26 - Hashing, Introduction to Probabilistic Methods
Lecture 27 - Ramsey Numbers, Large Cuts in Graphcs
Lecture 28 - Sum Free Subsets, Discrepancy
Lecture 29 - Extremal Set Families

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Lecture 30 - Super Concentrators
Lecture 31 - Streaming Algorithms - I
Lecture 32 - Streaming Algorithms - II

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