

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

NPTEL Video Course - Biotechnology - NOC:Data Analysis for Biologists

Subject Co-ordinator - Prof. Biplab Bose

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Rules of probability  
Lecture 2 - Discrete probability distribution  
Lecture 3 - Continuous probability distribution  
Lecture 4 - Moments: mean and variance  
Lecture 5 - Moments: variance and covariance  
Lecture 6 - Bayes theorem and likelihood  
Lecture 7 - Concept of statistical tests  
Lecture 8 - Vector and vector operations  
Lecture 9 - Matrix and matrix operations  
Lecture 10 - Determinant and Inverse of a matrix  
Lecture 11 - Eigenvalue and eigenvector  
Lecture 12 - Linear system of equations  
Lecture 13 - Singular value decomposition  
Lecture 14 - Getting ready with R  
Lecture 15 - Algebraic and logical operations in R  
Lecture 16 - Reading and writing data  
Lecture 17 - Statistics using R - descriptive statistics  
Lecture 18 - Statistics using R - t-test and ANOVA  
Lecture 19 - Linear algebra using R  
Lecture 20 - Scatter plot, Line plot and Bar plot  
Lecture 21 - Histogram and Box plot  
Lecture 22 - Heatmap and Volcano plot  
Lecture 23 - Network visualization  
Lecture 24 - Data visualization using ggplot2 - I  
Lecture 25 - Data visualization using ggplot2 - II  
Lecture 26 - Correlations  
Lecture 27 - Linear regression - I  
Lecture 28 - Linear regression - II  
Lecture 29 - Linear regression using R

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- Lecture 30 - Multiple linear regression
- Lecture 31 - Multiple linear regression using R
- Lecture 32 - Nonlinear regression
- Lecture 33 - Nonlinear regression using R
- Lecture 34 - Clustering and classification
- Lecture 35 - Logistic regression
- Lecture 36 - Logistic regression using R
- Lecture 37 - Distance measures for clustering
- Lecture 38 - k-means clustering
- Lecture 39 - k-means clustering using R
- Lecture 40 - Hierarchical clustering
- Lecture 41 - Hierarchical clustering using R
- Lecture 42 - Decision tree classifier
- Lecture 43 - Support vector machines
- Lecture 44 - Higher-dimensional data in biology
- Lecture 45 - Principle component analysis
- Lecture 46 - Principle component analysis using R
- Lecture 47 - t-SNE
- Lecture 48 - t-SNE using R
- Lecture 49 - Diffusion maps