

CS816

STATISTICAL INFERENCE FOR DATA SCIENCE II

3-0-0-3

Unit-I: Mathematical Background for Parameter Estimation

Estimable functions, Cramer-Rao bound, Sufficiency, Rao-Blackwell theorem, estimation in the linear model, best linear unbiased predictors, Gauss-Markov theorem

Unit-II: Hypothesis Testing

Neyman Pearson, uniformly most powerful tests, unbiased tests, invariant tests, likelihood ratio test, t-Test, chi-square test, Fisher's exact test, F-test, ANOVA, testing linear hypothesis

Unit-III: Nonparametric Statistics

Rank tests for comparing two treatments, Sign Test, Wilcoxon test, Mann-Whitney test, Kruskal-Wallis test

Text Books/ References:

J. Rice, "Mathematical Statistics and Data Analysis", Cengage Learning, 3rd Edition, 2006