NON-PARAMETRIC STATISTICAL INFERENCE

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PRE-REQUISITES : Basic understanding of Statistics and Probability

INTENDED AUDIENCE : B.Sc /B.Tech students in Statistics, maths & Computing/ Comp. Sc.

INDUSTRIES APPLICABLE TO : Any company that deal with data will need this

COURSE OUTLINE :

In this course we shall study Non-parameteric statistical inference. This is different from parametric Statistical Inference as here the underlying distribution is assumed to be unknown. Also, these work when the population is not Normally distributed. It has major applications in many practical situations. Also, is used in Data Science and Machine Learning.

ABOUT INSTRUCTOR :

Prof. Niladri Chatterjee is a Professor in Department of Mathematics, IIT Delhi. He is also the Chair Professor in Artificial Intelligence. He has more than 25 years of teaching experience in various subjects of Statistics and Computer Science. He is also the coordinator of IIT PAL Channel of Mathematics.

COURSE PLAN :

Week 1: Introduction to Non-parametric Inference , Estimation of Location and Dispersion, Introduction to Linear Rank Statistics

Week 2: Linear ranks tests for Scale Problem, Some results on Linear Rank Statistics

Week 3: Tests of Goodness of Fit , Tests of Randomness The General Two-Sample Problem, Run Test, Median Test, Kolmogorov-Smirnov Test

Week 4: Measures of Association of Bi-variate samples, Kendall's Tau Coefficient, Spearman's Rank Coefficient, Equality of k independent samples.