

Lecture - 20

Probability & Statistics.

Use the tools of probability to solve statistics (problems).

The science of statistics deals with drawing conclusions from observed data.

Population: A large collection of items that have measurable values associated with them.

[By suitably sampling from this collection, and then analyzing the sampled items, one hopes to draw some conclusions about the collection as a whole.

Sample/random sample: If x_1, x_2, \dots, x_n are independent random variables having a common distribution F , then we say that they constitute a sample or random sample from the distribution F .

① The population distribution F will not be completely specified and one will attempt to use the data to make inferences about F

———— non parametric inference problem.

② Some times, F is specified up to some unknown parameters.

For example, F is normal distribution having unknown mean and variance.

— parametric inference problem.

Big deal!

✓ How to estimate the values of these parameters and how to verify that those are correct estimates.

