

STAT 2593

Lecture 010 - Random Variables

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Random Variables

Learning Objectives

1. Understand the concept of a random variable, intuitively and mathematically.
2. Differentiate discrete and continuous random variables.

SUN	MON	TUE	WED	THU	FRI	SAT
68	74	83	75	82	81	90
						
WINDY	SUNNY	THUNDERSTORMS IN THE AFTERNOON	MOSTLY CLOUDY	PARTLY CLOUDY	RAIN	SUNNY



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 - ▶ Sometimes make explicit the functional form, with $X(\omega) = x$ when ω occurs during the experiment.

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- ▶ It is generally more convenient to think of random variables which *summarize* experiments, than the experiments themselves.
- ▶ In probability and statistics you will effectively *only* be working with random variables.

Example



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 - ▶ E.g., height, weight, timings

Summary

- ▶ Random variables are mathematical functions that summarize experiments numerically.
- ▶ Intuitively, random variables are variables whose value depends on chance.
- ▶ Can differentiate between discrete and continuous random variables.