

Statistics for Data Science -1

Lecture 8.2: Random Variable: Application

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Learning objectives

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5. Expectation and variance of a random variable.

Introduction

Rolling a dice twice

Tossing a coin three times

Application- Life insurance

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- ▶ X is a random variable that takes on one of the possible values 0, 1, 2 with respective probabilities

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 - ▶ $P\{X = 2\} = P(A \cap B) = 0.05 \times 0.1 = 0.005$

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Definition

*When outcomes for random event are numerical, but cannot be counted and are infinitely divisible, we have **continuous random variables**.*

Section summary

- ▶ What is a random variable.
- ▶ Probability of a random variable.
- ▶ Defined discrete and continuous random variable.