

## CHAPTER OVERVIEW

### 4: Probability Theory

Probability theory is concerned with probability, the analysis of random phenomena. The central objects of probability theory are random variables, stochastic processes, and events: mathematical abstractions of non-deterministic events or measured quantities that may either be single occurrences or evolve over time in an apparently random fashion.

- [4.1: Probability Experiments and Sample Spaces](#)
- [4.2: Experiments Having Equally Likely Outcomes](#)
- [4.3: Conditional Probability and Independence](#)
- [4.4: Counting Basics- the Multiplication and Addition Rules](#)
- [4.5: Intersection and Union of Events and Venn Diagrams](#)
- [4.6: Joint and Marginal Probabilities and Contingency Tables](#)
- [4.7: More Counting- Factorials, Combinations, and Permutations](#)

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