

# Probability

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1. Introduction, Definition of Probability
2. Sampling, Combinatorics
3. Uniform Probability, Basic Properties of Probability
4. Conditional Probability
5. Bayes' Rule, Independence
6. Random Variables
7. Probability Distributions
8. Probability Distributions
9. Independent Trials and Sampling, Binomial, Geometric, and Poisson Distributions
10. Binomial, Geometric, and Poisson Distributions
11. Expected Value
12. Review, Evening Midterm
13. Variance, Normal (Gaussian) Distribution
14. Normal (Gaussian) Distribution, Normal Approximation
15. Normal Approximation
16. Confidence Intervals
17. Poisson Approximation, Exponential Distribution
18. Poisson Process
19. Moment Generating Function
20. Moment Generating Function
21. Functions of Random Variables, Joint Distributions
22. Joint Distributions, Independence of Random Variables
23. Review, Evening Midterm

- 24. [Joint Distributions, Independence of Random Variables](#)
- 25. [Expectations of sums](#)
- 26. [Covariance, correlation, and variance of sums](#)
- 27. [Law of Large Numbers, Central Limit Theorem](#)
- 28. [Review](#)
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