

# Mathematical Statistics I

## Chapter 5: Limit theorems

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## 1. Convergence Concepts

# Convergence Concepts

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# Introduction

- This material comes primarily from Rice (2007, Chapter 4).
- We will cover the ideas of expected value, variance, as well as higher-order moments.
- This includes topics such as conditional expectation, which is one of the fundamental ideas behind many branches of statistics and machine learning.
- For instance, most regression / prediction algorithms are built with the idea of minimizing some conditional expectation.

## References and Acknowledgements

Rice JA (2007). *Mathematical statistics and data analysis*, volume 371. 3 edition. Thomson/Brooks/Cole Belmont, CA.

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