Information Theory in Biology

Course: 13 Information Theory in Biology

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Contents

1 Introduction

Brief introduction to Information Theory and its relevance in biological systems.

2 Historical Background

Discuss Shannon's foundational work and how it influenced the study of biological communication.

3 Genetic Information and DNA Encoding

How biological systems store, process, and transmit genetic information.

4 Neural Information Processing

Information-theoretic approaches to studying neurons, entropy, and signaling pathways.

5 Evolutionary Information Theory

How information theory explains adaptation, mutation, and selection in evolution.

6 Applications in Modern Biology

Use in genomics, protein folding, and systems biology.

7 Conclusion

Summarize the findings and relevance of information theory to biology.

8 References