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Information Theory and Coding

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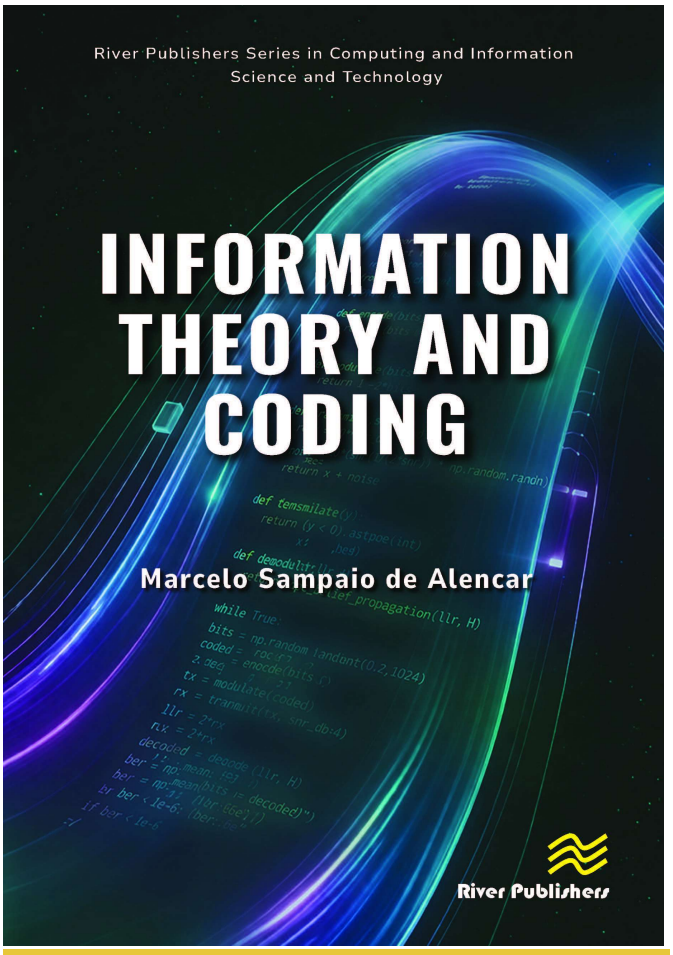
This book offers a rigorous yet accessible introduction to information theory, bridging the gap between abstract mathematics and real-world applications. Beginning with the historical evolution of the field, it builds a strong foundation through essential concepts in set theory, measure theory, probability, and entropy—core pillars for understanding modern information systems.

Designed to address the disconnect between highly theoretical texts and overly simplified engineering approaches, the book presents a seamless, integrated treatment of mathematical fundamentals and practical insight. It equips readers with the tools needed to model, analyze, and design systems in a rapidly evolving technological landscape.

Rich with examples, illustrations, and graphical explanations, the text supports intuitive learning while maintaining mathematical rigor. Carefully curated appendices provide additional depth, including Fourier transforms in one and two dimensions, as well as key formulas and inequalities.

Ideal for undergraduate students, engineers, and professionals across engineering, mathematics, statistics, physics, economics, and information technology, this book serves as both a comprehensive textbook and a long-term reference. A background in calculus is recommended.
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