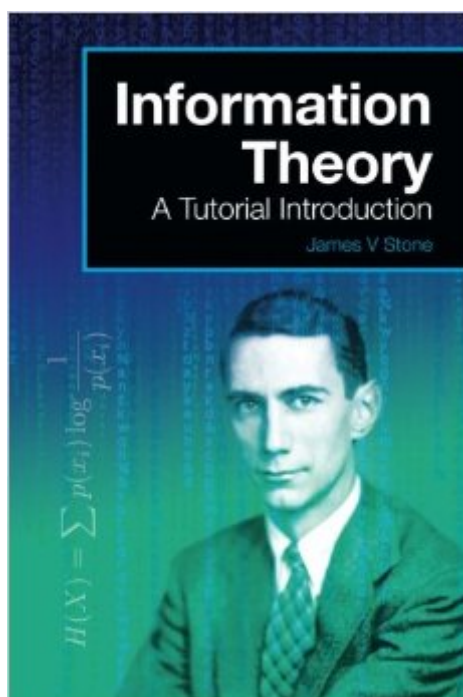# Information Theory: A Tutorial Introduction

Synopsis

Originally developed by Claude Shannon in the 1940s, information theory laid the foundations for the digital revolution, and is now an essential tool in telecommunications, genetics, linguistics, brain sciences, and deep space communication. In this richly illustrated book, accessible examples are used to introduce information theory in terms of everyday games like â ˆ20 questionsâ ™ before more advanced topics are explored. Online MatLab and Python computer programs provide hands-on experience of information theory in action, and PowerPoint slides give support for teaching. Written in an informal style, with a comprehensive glossary and tutorial appendices, this text is an ideal primer for novices who wish to learn the essential principles and applications of information theory.

Book Information

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Customer Reviews

Whether you are just beginning your relationship with mathematics or you are a theoretical mathematician working on the applications of knot theory to 4D topology, you have something to gain from this book.Mathematics is hard. The language in which mathematicians describe their work only compounds the difficulty of learning math for few are fluent in this succinct language. Unfortunately, it is this language almost all introductory mathematical textbooks inevitably conform to, at the cost of the reader's comprehension. Dr. Stone, overcomes this language rift by explaining the math in a friendly, familiar way. He further takes the care to ensure appropriate time is spent clarifying each topic in a variety of ways (in case one does not make much sense). Stone also provides appendices as reference for the reader who may need more explanation or refreshers. This kind of guidance through mathematical theory is inherently absent in the mathematical

language as its core is precision, brevity, and removal of all redundancy.It is his very thoughtful explanation and walkthrough which makes me confidence to say that Dr. James V Stone's introduction to information theory is conceivably the best book I have read; not just in regards to information theory but in regards to mathematics (applied or otherwise) as a whole.The reader is guided through Shannon's seminal work in a way that is applicable regardless of the reader's background (mathematics, art, biology, journalism, etc). Dr. Stone helps the reader develop an intuition for information theory.The feeling of such a clear and expounded grasp on a mathematical field is so rare currently that this feeling is most difficult to describe other than you'll "just get it.

This is a very easy-to-read book which acts as a good introduction to information theory. It contains an introduction and summary for each chapter, and bite-sized sections which are easily digestible. This book can be read like a novel, from start to finish, without feeling like a textbook, but rather an enjoyable read where learning is a bonus. Appendices are provided for background or further reading, and references allow for further research. Illustrations and formulae break up the text in the book and work well to support the explanations. This book is very clearly written and new concepts described in a lightly humoured and friendly style. Relatable examples span a wide range of subject areas and topics, and use everyday objects and scenarios, making this book accessible to a greater number of readers. â ˆKey pointâ ™ boxes provide useful summaries, either when reading the book from cover to cover, or to aid a reader who may wish to dip in and out of the book for specific topics or chapters. This is a satisfying read which explains everyday terms and concepts clearly, which you may not have considered in depth.The author clearly understands and appreciates different learning styles and addresses a wide range of these throughout the book. Ideas and theories are often presented using more than one method, which reinforces the explanations but is not at all patronising. The book is succinct and refers the reader back and forth to other relevant sections of the book. The author cleverly uses italics, sections and boxes to emphasise the most important learning points. The book is also supported by online resources for MatLab and Python, plus Powerpoint slides.

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