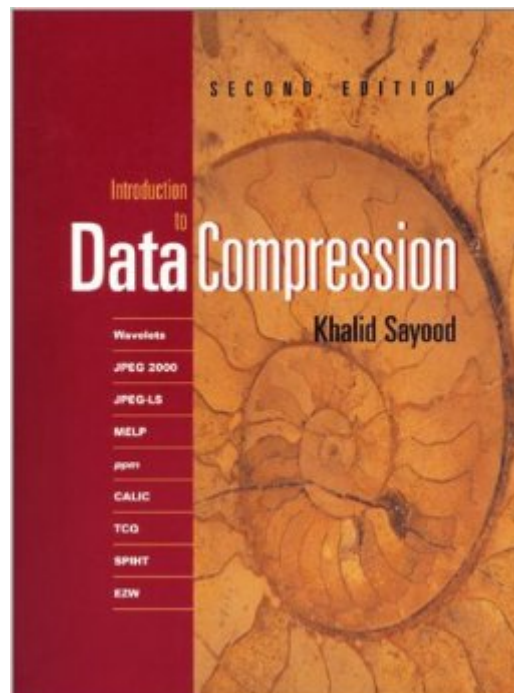# Introduction To Data Compression, Second Edition (The Morgan Kaufmann Series In Multimedia Information And Systems)

Synopsis

The second edition of Introduction to Data Compression builds on the features that made the first the logical choice-for practitioners who need a comprehensive guide to compression for all types of multimedia and instructors who want to equip their students with solid foundations in these increasingly important and diverse techniques.This book provides an extensive introduction to the theory underlying today's compression techniques, with detailed, instruction for their application. All of the coverage has been updated to reflect the state of the art in data compression, including both new algorithms and older methods for which new uses are being found. And the downloadable software gives you the opportunity to see firsthand how various algorithms work, to choose and implement appropriate techniques in your own applications, and to build your own algorithms. * Fully updated to cover the most recent lossy and lossless compression techniques, including wavelets, subband coding, predictive lossless techniques, and Huffman coding variants.* Explains established and emerging standards in depth: JPEG 2000, JPEG-LS, MPEG 2, Group 3 and 4 Faxes, JBIG 2, ADPCM, LPC, CELP, and MELP.* Includes an new chapter providing the mathematical background required for understanding wavelets and subband coding.* Via the companion Web site, provides source code that enables you to experiment with a wide range of compression techniques, along with sample data and updates on the latest developments in the compression field.

Book Information

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Customer Reviews

This is one of those books that only gets a new edition when the author has something genuinely new to say, and this third edition of Sayood's excellent introduction to data compression is no exception. This particular edition is different from the second mainly in that there is a new chapter on audio compression that includes a description of the mp3 algorithm. Also there is additional information on the new video coding standards as well as the new facsimile standards.As to the target audience for this book, if you are tasked with designing hardware or software implementations of data compression algorithms and you have some background in either electrical engineering or computer science, then this is a good book from which to learn and then to practice what you learn via some very good exercises. Some prior knowledge of information theory and random processes wouldn't hurt either. There is also an abundance of examples that are sprinkled throughout the book to illustrate concepts as they are presented. The author's approach in each chapter is to explain each concept in as an accessible manor as possible, present relevant equations, and then work an example using what has just been presented.The book presents the mathematical preliminaries in chapter 2, and chapters 3 and 4 are dedicated to coding algorithms which include Huffman coding, arithmetic coding, Golumb-Rice codes, and Tunstall codes. Chapters 5 and 6 describe many of the popular lossless compression methods and their applications. These methods include LZW, BWT, and DMC. Chapter 7 describes various lossless image compression algorithms such as JBIG as well as their applications. Chapter 8 discusses the mathematical background of lossy compression standards.

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