Lossless Source Coding

Books:

- T. Bell, J. Cleary & I. Witten, Text Compression
- J. Storer, Data Compression Methods and Theory
- J. Storer, Image and Text Compression
- M. Nelson, The Data Compression Book

Book Chapters:

- N. Abramson, Information Theory and Coding, Chapters 3,4
- R. Ash, *Information Theory*, Chapter 2
- R. Blahut, *Principles and Practice of Information Theory*, Chapter 3.
- V. Capellini, Data Compression and Error Control Techniques with Applications, Chapters 2, 7.
- T. Cover & J. Thomas, *Elements of information theory*, Chapter 5
- R. Gallager, Information Theory and Reliable Communication, Chapter 3.
- A. Gersho & R. Gray, Vector Quantization and Signal Compression, Chapter 9
- R. Hamming, Coding and Information Theory, two editions, Chapters 4,5,6
- D. Hankerson, G. Harris and P. Johnson, Jr., *Introduction to Information Theory and Data Compression*, Chapter 5-9.
- N. Jayant and P. Noll, *Digital coding of waveforms: Principles and Applications to Speech and Video*, Chapter 10 on Run-Length Coding.
- T. Lynch, Data Compression: Techniques and Applications, Chapter 3
- D. Jones, *Elementary Information Theory*, Chapter 3.
- M. Mansuripur, Introduction to Information Theory, Chapters 2,3,4
- R. McEliece, The Theory of Information and Coding, Chapter 10
- A. Netravali & B. Haskell, Digital Pictures: Representation and Compression, Chapter 3
- J. Proakis & M. Salehi, Communication Systems Engineering, Chapter 4.
- S. Shanmugam, Digital and Analog Communications Systems, Chapter 4.
- J. Stiffler, *Theory of Synchronous Communications*, Chapter 10, 11, 12
- I. Witten, A. Moffat, T. Bell, Managing Gigabytes: Compressing and Indexing Documents and Images, Chapters 2,6,7,9.

Papers

- L. Davisson and R. Gray, *Data Compression*, book of reprinted papers, vol. 14 in the series *Benchmark, Papers in EE and CS*.
- D. Leweler and D. Hirschberg, "Data Compression," ACM Computing Surveys, pp. 261-296, Sept. 1987.
- W. Pennebaker, W. Mitchell et al., Arithmetic Coding Articles, *IBM Journal Research and Development*, Nov. 1988.
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- A. Gersho & R. Gray, Vector Quantization and Signal Compression, Chapter 9
- N. Jayant and P. Noll, Digital coding of waveforms: Principles and Applications to Speech and Video K. Sayood, Introduction to Data Compression.

Book Chapters

J-P. Adoul, "Speech coding algrithms and vector quantization", Chapter 3 of *Advanced Digital Communications: Systems and Signal Processing Techniques*, by K. Feher.

- J.H. Conway & N.J.A. Sloane, Sphere Packings, Lattices and Groups, Chapter 2 on lattices quantizers
- J. Gibson, Principles of Digitial and Analog Communications, Chapter 13
- J. Gibson & K. Sayood, "Lattice Quantization", a chapter in *Advances in Electroncis and Electron Physics*, vol. 72.
- A. Jain, Fundamentals of Digital Image Processing, Chapters 4,11
- A. Netravali & B. Haskell, Digital Pictures: Representation and Compression, Chapters 5,6
- J. Proakis, Digital Communications, Section 2.3.2
- J. Proakis & M. Salehi, Communication Systems Engineering, Chapter 4.
- B. Sklar, Digital communications: fundamentals and applications, Chap. 11 by F. Harris.
- P. Swaszek, "Vector quantization," Chap 15 in *Communications and Networks*, ed. by I. Blake and V. Poor.
- J. Storer, *Image and Text Compression*, Parts 2 and 3.

Papers

- H. Abut, Vector Quantization, book of reprinted papers, IEEE.
- L. Davisson and R. Gray, *Data Compression*, book of reprinted papers, vol. 14 in the series *Benchmark, Papers in EE and CS*.
- A. Gersho and V. Cuperman, "Vector quantization: a pattern-matching technique for speech coding," in *IEEE Commun. Magazine*
- A. Gersho, "Asymptotically optimal block quantization," IEEE Trans. Inform. Thy., July 1079.
- R. Gray, "Vector quantization," in IEEE ASSP Magazine, April 1984.
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- A. Jain, "Image data compression: a review", IEEE Proceedings, March 1981.
- N. Jayant, Waveform quantization and coding, book of reprinted papers, IEEE.
- Y. Linde & R. Gray, "An algorithm for vector quantizer design," *IEEE Trans. Inform. Thy.*, Jan. 1980.
- J. Makhoul, S. Roucos and H. Gish, "Vector quantization in speech coding," *IEEE Proceedings*, Nov. 1985.
- N. Nasrabadi and R. King, "Image coding using vector quantization: a review," *IEEE Trans. Comm.*, Aug. 88.
- P. Swaszek, *Quantization*, book of reprinted papers, vol. 29 in the series *Benchmark*, *Papers in EE and CS*.

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Books

- R. Gray, Source Coding Theory
- T. Berger, Rate Distortion Theory: A Mathematical Basis for Data Compression
- T. Berger and L. Davisson, Advances in Source Coding.
- C. Shannon, "The Mathematical Theory of Communication," *Bell System Tech. J.*, July and Oct. 1948, also reprinted in a book by Shannon and Weaver.

Book Chapters

- R. Blahut, *Principles and Practice of Information Theory*, Chapter 6.
- T. Cover & J. Thomas, Elements of information theory, Chapter 13
- R. Gallager, Information Theory and Reliable Communication, Chapter 9.
- J. Gibson, Analog and Digital Communications, Chapter 12
- N. Jayant and P. Noll, Digital Coding of Waveforms: Principles and Applications to Speech and Video. Appendix D.
- J. Proakis & M. Salehi, Communication Systems Engineering, Chapter 4.
- D. Sakrison, Notes on Analog Communication, Chapter 6
- H. Stark, F. Tuteur, J. Anderson, Modern Electrical Communications, Section 11.4
- A. Viterbi and J. Omura, *Principles of Digital Communication and Coding*, Chapters 7,8

Papers

- L. Davisson and R. Gray, *Data Compression*, book of reprinted papers, vol. 14 in the series *Benchmark, Papers in EE and CS*.
- J. Kieffer, "A survey of the theory of source coding with a fidelity criterion," *IEEE Trans. Inform. Thy.*, Sept. 1993

Speech and Audio Coding

Books

- B. Atal, V. Cuperman and Gersho, Advances in Speech Coding
- B. Atal, V. Cuperman and Gersho, Speech and Audio Coding for Wireless and Network Applications
- T. Barnwell, K. Nayebi, C. Richardson, Speech Coding: A Computing Laboratory Textbook.
- A. Kondoz, Digital Speech Coding for Low Bit Rate Communication Systems
- B. Kleijn and K. Paliwal, Editors, Speech Coding and Synthesis
- J. Markel and A. Gray, Jr., Linear Prediction of Speech
- P. Papamichalis, Practical Approaches to Speech Coding
- S. Quackenbush, T. Barnwell, M. Clements, Objective Measures of Speech Quality

Book Chapters

Bellamy, Digital Telephony,

- J. Deller, J. Proakis and J. Hansen, Discrete-Time Processing of Speech Signals, Chapter 7
- J. Flanagan, Speech Analysis, Synthesis and Perception, Chapter 8.
- N. Jayant and P. Noll, Digital coding of waveforms: Principles and Applications to Speech and Video
- B. Keiser and E. Strange, Digital Telephony and Network Integration, Chapters 2,3,4
- D. O'Shaughnessy, Speech Communication: Human and Machine, Chapters 7,8.
- T. Parsons, Voice and speech processing, Chapters 9 and 10.
- L. Rabiner and R. Schafer, Digital Processing of Speech Signals.

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- J-P. Adoul, "Speech coding algrithms and vector quantization", Chapter 3 of *Advanced Digital Communications: Systems and Signal Processing Techniques*, by K Feher.
- A. Gersho and V. Cuperman, "Vector quantization: a pattern-matching technique for speech coding," in *IEEE Commun. Magazine*
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- N. Gilchrist and Christer Grewin, Collected Papers on Digital Audio Bit-Rate Reduction.

Image and Video Coding

Books

- M. Barnsley, Fractal Image Compression
- V. Bhaskaran and K. Konstantinides, *Image and Video Compression Standards*.
- R. Clarke, Digital Compression of Still Images and Video
- R. Clarke, Transform Coding of Images
- B. Furht, J. Greenberg, R. Westwater, Motion Estimation Algorithms for Video Compression
- J. Gibson, T. Berger, T. Lookabaugh, D. Lindbergh, and R. L. Baker, *Digital Compression for Multimedia*, 1998.
- B. Haskell, A. Puri, A. Netravali, Digital Video: An Introduction to MPEG-2
- W. Kou, Digital Image Compression: Algorithms and Standards
- Leduc, J-P, Digital Moving Pictures: coding and Transmission on ATM Networks
- A. Netravali and B. Haskell, Digital Pictures: Representation and Compression

- J. Ozer, Video Compression for Multimedia
- W. Pennebaker and J. Mitchell, JPEG Still Image Compression Standard
- M. Rabbani and P. Jones, Digital Image Compression Techniques
- T. Ramstad, Subband Compression of Images: Principlies and Examples
- K. Rao and P. Yip, Discrete Cosine Transform, Algorithms, Advantages, Applications
- K. Rao and J.J. Hwang, Techniques and Standards for Image, Video, and Audio Coding
- G. Schuster and A. Katsaggelos, Rate-Distortion Based Video Compression
- J. Storer, Image and Text Compression Motion Analysis for Image Sequence Coding
- L. Torres and M. Kunt, Video Coding: The Second Generation Approach.
- R. Westwater and B. Furht, Real-Time Video Compression: Techniques and Algorithms

Book Chapters

- D. Hankerson, G. Harris and P. Johnson, Jr., *Introduction to Information Theory and Data Compression*, Chapter 10.
- F. Huck and C. Fales, *Visual Communication: An Information Theory Approach*, Chapters 5 and Appendix D.
- A. Jain, Fundamentals of Digital Image Processing, Chapters 4,5,6,11
- B. Keiser, Broadband Coding, Modulation, and Transmission Engineering, Chapter 3 on video encoding.
- W. Pratt, Digital Image Processing, Part 6.
- A. Rosenfeld and A. Kak, Digital Image Processing
- J. Storer, *Image and Text Compression*, Part 1.
- I. Witten, A. Moffat, T. Bell, Managing Gigabytes: Compressing and Indexing Documents and Images, Chapters 6,7,9.

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- A. Jain, "Image data compression: a review", IEEE Proceedings, March 1981.
- D. Le Gall, "MPEG: A Video Compression Standard for Multimedia Applications, *Communications of the ACM*, April, 1991.N. Nasrabadi and R. King, "Image coding using vector quantization: a review," *IEEE Trans. Comm.*, Aug. 88.
- W. Pratt, *Image Transmission Techniques*, collection of papers.
- G. Wallace, "The JPEG Still Picture Compression Standard", *Communications of the ACM*, April, 1991.

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- D. Childers, Probability and Random Processes
- W. Davenport, Probability and Random Processes
- W. Davenport and W. Root, Introduction to the Theory of Random Signals
- R. Gray and L. Davisson, Random Processes
- A. Leon-Garcia, Probability and Random Processes for Electrical Engineering
- R. Mortensen, Random Signals and Systems
- A. Papoulis, *Probability Random Variables and Stochastic Processes*, two editions.
- B. Picinbono, Random Signals and Systems
- D. Sakrison, *Communication Theory* (Chapters 3 and 4)
- H. Stark and J. Woods, Probability, Random Processes and Estimation Theory for Engineering