Lossless Source Coding

Books:
T. Bell, J. Cleary & I. Witten, *Text Compression*
M. Nelson, *The Data Compression Book*
J. Storer, *Data Compression Methods and Theory*
J. Storer, *Image and Text Compression*
I. Witten, A. Moffat, T. Bell, *Managing Gigabytes*

Book Chapters:
N. Abramson, *Information Theory and Coding*, Chapters 3,4
V. Capellini, *Data Compression and Error Control Techniques with Applications*, Chapters 2, 7.
A. Gersho & R. Gray, *Vector Quantization and Signal Compression*, Chapter 9
R. Hamming, *Coding and Information Theory*, two editions, Chapters 4,5,6
J. Gibson, T. Berger, T. Lookabough, D. Lindbergh, R. Baker, *Digital Compression for Multimedia*, Chapters 2,3
T. Lynch, *Data Compression: Techniques and Applications*, 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
S. Shanmugam, *Digital and Analog Communications Systems*, Chapter 4.
J. Stiffler, *Theory of Synchronous Communications*, Chapter 10, 11, 12

Papers
Lossy Source Coding

Books
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. Gibson, *Principles of Digital and Analog Communications*, Chapter 13
A. Netravali & B. Haskell, *Digital Pictures: Representation and Compression*, Chapters 5,6
J. Proakis, *Digital Communications*, Section 2.3.2
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.

Papers
H. Abut, *Vector Quantization*, book of reprinted papers, IEEE.
Source Coding References for EECS 651

Rate-distortion theory

Books
R. Gray, *Source Coding Theory*
T. Berger, *Rate Distortion Theory: A Mathematical Basis for Data Compression*

Book Chapters
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.
D. Sakrison, *Notes on Analog Communication*, Chapter 6
H. Stark, F. Tuteur, J. Anderson, *Modern Electrical Communications*, Section 11.4

Papers

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*
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. Gibson, T. Berger, T. Lookabough, D. Lindbergh, R. Baker, *Digital Compression for Multimedia*
Source Coding References for EECS 651

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


T. Parsons, *Voice and speech processing*, Chapters 9 and 10.


Papers


A. Gersho and V. Cuperman, "Vector quantization: a pattern-matching technique for speech coding," in *IEEE Commun. Magazine*


N. Gilchrist and Christer Grewin, *Collected Papers on Digital Audio Bit-Rate Reduction*.

Image and Video Coding

Books

M. Barnsley, *Fractal Image Compression*


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*


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: Principles 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

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.
A. Rosenfeld and A. Kak, Digital Image Processing
I. Witten, A. Moffat, T. Bell, Managing Gigabytes: Compressing and Indexing Documents and Images, Chapters 6, 7, 9.

Papers
W. Pratt, Image Transmission Techniques, collection of papers.

501 level textbooks on probability and random processes
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)