of Medical Information Sciences, College of Medicine, Urbana-Champaign, and holds appointments to many UIUC departments. He continues to work on new imaging methods and image processing techniques.

Signal Processing for Magnetic Resonance Imaging and Spectroscopy. Hong Yang, Ed. New York: Marcel Dekker, 2002, 674 pp, $195.00 (hardbound).

This book is part of the Marcel Dekker Signal Processing and Communications Series edited by K.J. Ray Liu. It is intended as a text and a reference and addresses the latest signal processing techniques in magnetic resonance imaging and magnetic resonance spectroscopy for more efficient clinical diagnosis. It provides algorithms for image segmentation and analysis, reconstruction and visualization, and removal of distortions and artifacts for increased detection of disease. It also discusses the evaluation of specific shapes and geometric features of MR images, modern strategies for MR data processing, and the characterization and analysis of tissues. It covers wavelet transform and projection on convex sets; methods for image reconstruction, restoration and enhancement; and methods for reduction of ghost artifacts.

Hong Yan is professor, imaging science, University of Sydney, Australia.

DSP Applications Using C and the TMS320C6x DSK. Rulph Chassaing. New York: Wiley Interscience, 2002, 364 pp. and included CD, $84.95 (hardbound).

This book is intended primarily for senior undergraduate and first-year graduate students in electrical and computer engineering and as a tutorial for the practicing engineer. Based on the principle that DSP can best be learned through interaction in a laboratory setting, it assumes that the user has some background in linear systems and some knowledge of C.

Chapters begin with a discussion of theory followed by examples that provide the background necessary to perform the concluding experiments. Most of the 76 solved programming examples use C code, although a few use assembly and linear assembly code.

Rulph Chassaing is the author of three other texts on applications of real-time DSP to Texas Instruments processors. He is a visiting lecturer at the University of Massachusetts, Dartmouth.

Digital Image Processing (second edition). Rafael C. Gonzalez and Richard E. Woods. Upper Saddle River, NJ: Prentice Hall, 2002, 793 pp., $107.00 (hardbound).

This popular text has been around for 20 years, with upgrades (first published in 1977 and 1987 by Gonzalez and Wintz; updated in 1992 by Gonzalez and Woods). The present edition is tailored for students and instructors. The text covers all mainstream areas of image processing and contains a totally revised introduction and discussion of image fundamentals, image enhancement in spatial and frequency domains, restoration, color image processing, wavelets, image compression, morphology, segmentation, and image description. The book also has a companion website and a supplementary instructors manual is available for instructors who adopt the book for classroom use.

Communication Systems Engineering (second edition). John G. Proakis and Masoud Salehi. Upper Saddle River, NJ: Prentice Hall, 2002, 801 pp., $107.00 (hardbound).

This new edition exposes readers to relevant topics of digital communication system principles including: source coding, channel coding, baseband and carrier modulation, channel distortion, channel equalization, synchronization, and wireless communications. New content includes coverage of the JPEG standard for image compression, coverage of OFDM and multicarrier modulation, coverage of Turbo codes, product codes, the BCJR algorithm, and interative codes, and a chapter on wireless communications (including new material on GSM and the IS-95 CDMA standard, as well as multiple antenna systems and space-time codes). The authors indicate that the objective of the book is to provide an introduction to the basic principles in the analysis and design of communications systems, and it is intended as a text for a first course in communications at the senior undergraduate or first-year graduate level.

Adaptive Filter Theory (fourth edition). Simon Haykin. Upper Saddle River, NJ: Prentice Hall, 2002, 920 pp., $107.00 (hardbound).

"The primary aim of this book is to develop the mathematical theory of various realizations of linear adaptive filters….In terms of background, it is assumed that the reader has taken introductory undergraduate courses on probability theory and digital signal processing; undergraduate courses on communication and control systems would also be an advantage." (Preface) The book targets a broad audience with 17 chapters, an epilogue, and seven appendixes addressing: stochastic processes and models; Wiener filters; linear prediction; method of steepest descent; least-mean-square adaptive filters,

normalized least-mean-square adaptive filters, recursive least-squares adaptive filters, order recursive adaptive filters; frequency-domain and subband filters; method of least squares; Kalman filters; square-root adaptive filters; finite-precision effects; tracking of time-varying systems; adaptive filters using infinite-duration impulse response structures; blind deconvolution; and back-propagarion learning. This text is part of the Prentice Hall Information and System Sciences Series edited by Thomas Kailath.

Computer Explorations in Signals and Systems Using Matlab (second edition). Upper Saddle River, NJ: Prentice Hall, 2002, 224 pp, $24.00 (softbound workbook).

This compact workbook of computer exercises comes at a compact price. An update of the 1997 edition, it is a part of the Prentice Hall Signal Processing Series edited by Alan V. Oppenheim. The exercises are divided in the book to address basic, intermediate, and advanced problems, allowing the reader to progress from the fundamentals to the processing of real data. Topics covered include: signals and systems; linear time-variant systems, Fourier series representation of periodic signals; the continuous-time Fourier transform; the discrete-time Fourier transform; time and frequency analysis of signals and systems; sampling; communications systems; the Laplace transform, the z-transform; and feedback systems. The index includes a list of the MATLAB6® functions used in the book, and a reference to their explanations in the exercises.

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