

New Books  
Raymond Yeung

**An Introduction to GSM,**

by Siegmund Redl and Malcolm W. Oliphant. Artech House, 1995, 379 pp., \$95, ISBN 0-89006-785-6.

*Contents:* Global Scenario for Cellular Mobile Radio; Transition from Analog to Digital Cellular Radio — Why? A Digital Cellular Mobile Radio System; Layers and Signaling Principles in the GSM System; Physical Layer; Data Link Layer; Network Layer; Testing — Analog vs. Digital GSM Systems; Testing a GSM Mobile Station; Testing a GSM Base Station; Applications for GSM Test Equipment; NADC and PDC; CDMA.

**Understanding GPS: Principles and Applications,**

Edited by Elliot Kaplan. Artech House, 1996, 570 pp., \$114, ISBN 0-89006-793-7.

*Contents:* Fundamentals; System Segments; Satellite Signal Characteristics; Satellite Signal Acquisition and Tracking; Effects of RF Interference on Satellite Signal Receiver Tracking; Performance of Standalone GPS; Differential GPS; Integration with Other Sensors; The Russian GLONASS System; INMARSAT Civil Navigation Satellite Overlay; GPS Markets and Applications.

**Wireless Communications for Intelligent Transportation Systems,**

by Scott D. Elliott and Daniel J. Dailey. Artech House, 1995, 315 pp., \$90, ISBN 0-89006-821-6.

*Contents:* Needs and Analysis; Cellular Telephony; Radiopaging; Private Land Mobile Radio; Wireless Local Area Networks; Terrestrial Microwave Relay; Satellites; Meteor Burst.

**Technology and Standards for Multimedia Communication:**

**Videoconferencing & Videotelephony,** by Richard Schaphorst. Artech House, 1996, 232 pp., \$83, ISBN 0-89006-844-5.

*Contents:* Overview; Video Teleconferencing: Benefits, System Design; Video Compression Techniques; Audio Coding; Audiovisual Standards Organizations; Audiovisual Telephony via N-ISDN; Audiovisual Telephony via the PSTN and Mobile Radio; Audiovisual Telephony via

B-ISDN; Audiographic Terminals; ISO Audiovisual Standards; Definitions; Abbreviations.

**Asynchronous Transfer Mode Networks: Performance Issues, 2nd Ed.**, by Raif O. Onvural. Artech House, 1995, 535 pp., \$95, ISBN 0-89006-804-6.

*Contents:* Broadband-Integrated Services Digital Network; Asynchronous Transfer Mode; Source Characterization in ATM Networks; Traffic Management in ATM Networks; ATM Switching; ATM Interfaces; Signaling in ATM Networks; Routing; Connectionless Service in ATM Networks; Transport Protocols; Network Management; Appendix A — ATM Standards.

**Practical Computer Network Security,**

by Mike Hendry. Artech House, 1995, 203 pp., \$66, ISBN 0-89006-801-1.

*Contents:* Aspects of Security; Preconditions; Risk Management; Hardware; Software and Networks; Application-Specific Risks; Encryption Principles; Keys and Key Management; Hardware Tools; Software Tools; Access Rights Management; Types of Network; Commercial; Banking and Financial; Subscription Services; Other Applications; Summary and Conclusions.

**Digital Communications, 3rd Ed.,**

by John G. Proakis. McGraw-Hill, 1995, 956 pp., ISBN 0-07-051726-6.

*Contents:* Introduction; Probability and Stochastic Processes; Source Coding; Characterization of Communication Signals and Systems; Optimum Receivers for the Additive White Gaussian Noise Channel; Carrier and Symbol Synchronization; Channel Models and Capacity Coding; Block and Convolutional Channel Codes; Signal Design for Band-Limited Channels; Communication through Band-Limited Linear Filter Channels; Adaptive Equalization; Multichannel and Multicarrier Systems; Spread Spectrum Signals for Digital Communications; Digital Communication through Fading Multipath Channels; Multiuser Communications.

**Introduction to Random Processes in Engineering,**

by V. A. Balakrishnan. Wiley, 1996, 320 pp.

*Contents:* Random Processes: Basic Concepts, Properties; Stationary Random Processes: Covariance and Spectrum; Response of Linear Systems to Random Inputs: Discrete-time Models; Response of Linear Systems to Random Inputs: Continuous-time Models; Time Averages and the Ergodic Principle; Sampling Principle and Interpolation; Simulation of Random Processes; Random Fields; Linear Filtering Theory.

**Statistical Digital Signal Processing and Modeling,**

by Monson Hayes. Wiley, 1996, 576 pp.

*Contents:* Introduction; Background; Discrete-Time Random Processes; Signal Modeling; The Levinson Recursion; Lattice Filters; Wiener Filtering; Spectrum Estimation; Adaptive Filtering; Appendix A: Using MATLAB Programs.

**Wireless Information Networks,**

by Kaveh Pahlavan and Allen H. Levesque. Wiley, 1996, 572 pp.

*Contents:* Overview of Wireless Networks; Frequency Administration and Standards Activities; Characterization of Radio Propagation; Channel Measurement and Modeling for Narrowband Signaling; Measurement of Wideband Channel Characteristics; Computer Simulation for the Radio Channel; Modem Technology; Signal Processing for Wireless Applications; Spread Spectrum for WIN Systems; Wireless Optical Networks; Networks and Access Methods; Standards and Products.

**Digital Filters and Signal Processing, 3rd Ed. (with MATLAB**

**Exercises),** by Leland B. Jackson. Kluwer, 1995, 520 pp., \$78.50, ISBN 0-7923-9559-X.

*Contents:* Introduction: Terminology and Motivation; Discrete-Time Signals and Systems; The  $z$  Transform; Input/Output Relationships; Discrete-Time Networks; Sampling and Fourier Analysis; Discrete Fourier Transform; IIR Filter Design by Transformation; FIR Filter Design Techniques; Filter Design by Modeling; Quantization Effects; Digital Filter Implementation; Filter and Systems Examples; Answers to Selected Problems.

**Control and Performance in Packet, Circuit, and ATM Networks,**

by XueDa Gu, Kazem Sohraby and Dhadesugoor R. Vaman. Kluwer, 1995, 352 pp., \$97, ISBN 0-7923-9625-1.

*Contents:* Components of a Telecommunication Network; Networking; Network Performance Measures; Static Flow Model; Dynamic Flow Models; Learning Automata; Appendix A: Simple Queueing Systems; Appendix B: Lagrangian Multiplier Method.

**Fourier Transforms: An Introduction for Engineers,**

by Robert M. Gray and Joseph W. Goodman. Kluwer, 1995, 384 pp., \$59.95, ISBN 0-7923-9585-9.

*Contents:* Signals and Systems; The Fourier Transform; Fourier Inversion; Basic Properties; Generalized Transformations and Functions; Convolution and Correlation; Two Dimensional Fourier Analysis; Memoryless Nonlinearities.

**Image and Video Compression Standards,**

by Vasudev Bhaskaran and Konstantinos Konstantinides. Kluwer, 1995, 392 pp., \$96, ISBN 0-7923-9591-3.

*Contents:* Compression Fundamentals; Methods and Standards for Lossless Compression; Fundamentals of Lossy Image Compression; Fundamentals of Lossy Video Compression; The JPEG Standard; The MPEG Video Standards; The H.261 Video Encoding Standard; Processing Requirements; RISC and DSP Cores; Architectures for the DCT; Hardware for Motion Estimation; Hardware for Entropy Encoding; Implementation of JPEG Processors; Integrated Circuits for Video Coders; Multimedia Enhancements for RISC Processors; Standards for Audio Compression; Nonstandard compression techniques; A: Abbreviations and Symbols; B: Internet Directory.

**Robustness in Automatic Speech Recognition: Fundamentals and Applications,**

by Jean-Claude Junqua and Jean-Paul Haton. Kluwer, 1995, 472 pp., \$130, ISBN 0-7923-9546-4.

*Contents:* Part A. Speech Communication by Humans and Machines: Nature and Perception of Speech Sounds; Background on Speech Analysis; Fundamentals of Automatic Speech Recognition. Part B. Robustness in ASR: Problems and Issues: Speaker Variability and Specificity; Dealing with Noisy Speech and Channel Distortions. Part C. Possible Solutions and Some Perspective: The Current Technology and Its Limits: An Overview; Towards Robust Speech Analysis; On the Use of a Robust Speech Representation; ASR of Noisy, Stressed, and Channel

Distorted Speech; Word-Spotting and Rejection; Spontaneous Speech; On the Use of Knowledge in ASR; Application Domain; Human Factors, and Dialogue. Appendix.

**Wireless Personal Communications: Research Developments,**

Edited by Brian D. Woerner, Theodore S. Rappaport and Jeffrey H. Reed. Kluwer, 1995, 312 pp., \$85, ISBN 0-7923-9555-7.

*Contents:* Tutorials in Wireless Communication; Digital Signal Processing and Spread Spectrum for Wireless Communications; Propagation; Technical Evaluation of Emerging Mobile Wireless Systems; Issues for Defense Conversion into the Wireless Industry; Competitive Issues for PCS.

**Error Detecting Codes: General Theory and Their Applications**

**in Feedback Communication Systems,** by Torleiv Klove and Valery Korzhik. Kluwer, 1995, 264 pp., \$98, ISBN 0-7923-9629-4.

**Code Division Multiple Access Communications,**

Edited by Savo G. Glisic and Pentti A. Leppänen. Kluwer, 1995, 376 pp., \$105, ISBN 0-7923-9553-0.

**Subband and Wavelet Transforms: Design and Applications,**

Edited by Ali Akansu and Mark J. T. Smith. Kluwer, 1995, 464 pp., \$95, ISBN 0-7923-9645-6.

**Authentication Systems for Secure Networks,**

by Rolf Oppliger. Artech House, 1996, 156 pp., \$71, ISBN 0-89006-510-1.

**Digital Image Compression,**

by Weidong Kou. Kluwer, 1995, 208 pp., \$85, ISBN 0-7923-9626-X.

**Computer Networks: Architecture, Protocols and Software,**

by John Y. Hsu. Artech House, 1996, 570 pp., \$102, ISBN 0-89006-852-6.

**Advances in Telecommunications Networks,**

by William S. Lee and Derrick C. Brown. Artech House, 1995, 204 pp., \$83, ISBN 0-89006-606-X.

- Unix Internetworking, 2nd Ed.,**  
by Uday O. Pabrai. Artech House, 1995, 454 pp., \$78, ISBN 0-89006-778-3.
- An Introduction to International Telecommunications Law,**  
by Charles H. Kennedy and M. Veronica Pastor. Artech House, 1996, 270 pp., \$78, ISBN 0-89006-835-6.
- An Introduction to U.S. Telecommunications Law,**  
by Charles H. Kennedy. Artech House, 1994, 170 pp., \$78, ISBN 0-89006-752-X.
- International Telecommunications Handbook,**  
by Robert M. Frieden. Artech House, 1995, 419 pp., \$83, ISBN 0-89006-568-3.
- Smart Highways, Smart Cars,**  
by Richard Whelan. Artech House, 1995, 231 pp., \$71, ISBN 0-89006-765-1.
- Cellular Digital Packet Data,**  
by M. Sreetharan and Rajiv Kumar. Artech House, 1996, 305 pp., \$95, ISBN 0-89006-709-0.
- Wireless Communications in Developing Countries: Cellular and Satellite Systems,** by Rachael E. Schwartz. Artech House, 1996, 195 pp., \$71, ISBN 0-89006-874-7.
- CDMA for Wireless Personal Communications,**  
by Ramjee Prasad. Artech House, 1996, 416 pp., \$96, ISBN 0-89006-571-3.
- Mobile Data Communications Systems,**  
by Peter Wong and David Britland. Artech House, 1995, 180 pp., \$78, ISBN 0-89006-751-1.
- Personal Communication Systems and Technologies,**  
Edited by John Gardiner and Barry West. Artech House, 1995, 252 pp., \$78, ISBN 0-89006-588-8.

**Wireless: The Revolution in Personal Communications,**

by Ira Brodsky. Artech House, 1995, 276 pp., \$60, ISBN 0-89006-717-7.

**Personal Communications Networks: Practical Implementation,**

by Alan Hadden. Artech House, 1995, 294 pp., \$78, ISBN 0-89006-762-7.

**Mobile Telecommunications: Emerging European Markets,**

Edited by K.-E. Schenk, Jürgen Müller and Thomas Schnöring. Artech House, 1995, 323 pp., \$83, ISBN 0-89006-796-1.