

Multimedia Programming: Objects, Environments and Frameworks. By Simon Gibbs and Dionysios Tschritzis. Addison-Wesley, Wokingham, England. (1995). 323 pages. \$35.45.

Contents:

Preface. Acknowledgments. Part I. 1. An introduction to multimedia. 2. Media types. 3. Multimedia environments. Part II. 4. Object-oriented multimedia. 5. A multimedia framework. 6. Using the framework: Two applications. Part III. 7. Some research problems in multimedia programming. 8. Integrated multimedia systems. Appendices. A. A media processing platform. B. A media component kit. C. Online multimedia information sources. Glossary. Bibliography. Index.

An Introduction to Neural Networks. By James A. Anderson. MIT Press, Cambridge, MA. (1995). 650 pages. \$55.00.

Contents:

Introduction. Acknowledgments. 1. Properties of single neurons. 2. Synaptic integration and neuron models. 3. Essential vector operations. 4. Lateral inhibition and sensory processing. 5. Simple matrix operations. 6. The linear associator: Background and foundations. 7. The linear associator: Simulations. 8. Early network models: The perceptron. 9. Gradient descent algorithms. 10. Representation of information. 11. Applications of simple associators: Concept formation and object motion. 12. Energy and neural networks: Hopfield networks and Boltzmann machines. 13. Nearest neighbor models. 14. Adaptive maps. 15. The BSB model: A simple nonlinear autoassociative neural network. 16. Associative computation. 17. Teaching arithmetic to a neural network. Afterword. Index.

Descartes and His Contemporaries: Meditations, Objections, and Replies. Edited by Roger Ariew and Marjorie Grene. University of Chicago Press, Chicago. (1995). 261 pages. \$45, £35.95 (cloth); \$17.95, £14.25 (paper).

Contents:

List of abbreviations. Prologue (Marjorie Grene and Roger Ariew). 1. The place of the *Objections* in the development of Cartesian metaphysics (Jean-Luc Marion). 2. The *First Objections* (Theo Verbeek). 3. Catusus' objections to God (Jean-Robert Armogathe). 4. Mersenne's suggestion: Cartesian meditation and the mathematical model of knowledge in the seventeenth century (Peter Dear). 5. J.-B. Morin and the *Second Objections* (Daniel Garber). 6. Hobbes's objections and Hobbes's system (Tom Sorell). 7. Hobbes versus Descartes (Edwin Curley). 8. Arnauld: From Ockhamism to Cartesianism (Vincent Carraud). 9. Occasionalism and the question of Arnauld's Cartesianism (Steven Nadler). 10. Divine will and mathematical truth: Gassendi and Descartes on the status of the eternal truths (Margaret J. Osler). 11. Pandora; or, Essence and reference: Gassendi's nominalist objection and Descartes' realist reply (Thomas M. Lennon). 12. The greatest stumbling block: Descartes' denial of real qualities (Stephen Menn). 13. Pierre Bourdin and the *Seventh Objections* (Roger Ariew). Epilogue (Marjorie Grene). Bibliography. Contributors. Index.

Ethnomathematics: A Multicultural View of Mathematical Ideas. By Marcia Ascher. Chapman & Hall, New York. (1991). 203 pages. \$31.00.

Contents:

Introduction. 1. Numbers: Words and symbols. 2. Tracing graphs in the sand. 3. The logic of kin relations. 4. Chance and strategy in games and puzzles. 5. The organization and modeling of space. 6. Symmetric strip decorations. 7. In conclusion: Ethnomathematics. Index.

C and Unix: Tools for Software Design. By Martin L. Barrett and Clifford H. Wagner. John Wiley & Sons, New York. (1996). 446 pages. \$46.95.

Contents:

Basic program syntax and control. 1. Introduction. 2. Programs. 3. Flow of control. Program design and control of input/output. 4. Functions. 5. Input/output. 6. Program design. Data structure design and management. 7. Arrays. 8. Strings. 9. Structures. 10. Dynamic memory management. 11. Data structure design. Advanced features of C and Unix. 12. Specialized tools. 13. Advanced programming topics. 14. Advanced design methods. Appendices and index. A. Summary of C commands. B. Standard library header files. C. Summary of UNIX commands. D. Summary of vi commands. E. Operator precedence chart. Index.

Advanced Scientific Fortran. By David R. Willé. John Wiley & Sons, Chichester. (1995). 234 pages. \$24.95.

Contents:

Introduction. I. Scientific computing. 1. Double and single precision. 2. Portability and standards. 3. The NAG library. 4. Save, reverse communication and arrays. 5. Internal files. 6. Arrays in FORTRAN. 7. Work arrays and array partitioning. 8. Memory efficiency. 9. Basic linear algebra subprograms (BLAS). 10. Linear algebra and vectorisation. 11. Gaussian elimination. 12. LAPACK. 13. Programming considerations. 14. Code optimisation. 15. Input/output. II. Fortran 90 and high performance Fortran. 16. Fortran 90—Introduction. 17. Subroutines and modules. 18. Types and pointers. 19. Arrays. 20. Control structures. 21. Input/output in Fortran 90. 22. High performance Fortran. Appendices. A. The BLAS. B. Intrinsic functions in Fortran 90. C. Solutions to exercises. References. Index.