Book Reviews—continued


The Raster Graphics Handbook is a collection of introductions to several selected topics in raster graphics. The majority of these are related to video controller and monitor design, but the individual topics do not seem well connected as one reads through the book, and the intended audience is somewhat difficult to discern.

Generally, the point of view is that of a raster hardware designer. Most of the hardware-related topics are introduced with design decisions listed. This level of treatment is not likely to offer practicing controller designers any new information; the book seems more appropriately suited to acquainting interested graphics users or software writers with the hardware.

Two of the book's eight chapters deal with graphics software and introduce various modeling and viewing transformations. The GSPC Core terminology is defined and illustrated with familiar examples, and Core and DI-3000 graphics software subroutines are also listed. Readers knowledgeable in graphics software, however, might find it difficult to understand the decision to include a discussion of vector-oriented graphics software in a raster handbook. The lack of discussion on various software topics usually associated with raster devices, such as antialiasing, area fill algorithms, and models for generating continuous-tone realistic images, is also perplexing.

Several topics related to light and human light perception are included with an introduction to the measurement of light (both physical and perceptual) and various color models.

The publishers have apparently tried to cover many topics for many people. The key to successfully reading this book might therefore be to skip over the material you are already familiar with and read the other chapters solely for their introductory value.

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ACM-IEEE 19th Design Automation Conference Proceedings—(IEEE Computer Society, Los Alamitos, Calif., 1982, 919 pp., $39.00—members, $52.00—nonmembers).*

The conference covered by these proceedings is largely by and for people who design and build digital electronic devices, networks, and systems. Of the 47 documented sessions, one addresses robotics, one is on CAD for manufacturing, one is on architectural applications, and a fourth session is on mechanical CAD technology. Nearly all else describes theory, technology, tools, systems, practices, and experiences in the field of digital electronics.

Don't be misled. There is a great deal of interest in nonelectronic DA topics. The number of workers in the nonelectronic section of the industry is probably greater and more money is likely at stake. Without doubt, problems in nonelectronic areas are at least as interesting as those in electronics. To put it simply, at the level of physical design, the geometry of electronics is mostly two-dimensional and the behavior of electronics logical. By contrast, the physical design of nonelectronic objects involves three-dimensional geometry with behavior that includes the motion, intended or not, of the designed object. We simply don't know as much in this more complex realm and have not yet achieved widespread "design automation."

In the electronics DA arena, this volume is the source book for workers in the field. Good sessions and solid papers address software, databases, workstations, and case studies, and much of the material is relevant far beyond the frequent electronics context of its genesis. Other sessions address traditional and perennial topics of great importance such as partitioning, layout, placement, routing, simulation, testing, and verification. Additionally, although VLSI is understandably the major thrust of the conference, programmed logic arrays and other devices are included in the proceedings as well.

In short, these proceedings are a gold mine of references and insight into the technology of the DA field today.

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*Order directly from the IEEE Computer Society, using order form on page 91 (catalog number 416).