Senior Editor's Introduction

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In this space in the first issue of *IEEE Computer Graphics and Applications*, I discussed our editorial policy and scope. Now, after three issues, one reader survey, and a number of meetings by members of our editorial board, it is appropriate to reexamine our objectives, especially since we intend *IEEE CG&A* to be a publication which evolves in response to its readers' needs and interests.

We have committed ourselves to publishing articles of high quality and broad interest. Experience has confirmed this commitment. We will maintain our broad appeal by selecting articles so that each issue balances theory, applications, and practice.

Theory. Theoretical papers will meet the rigorous reviewing standards of an archival research journal. However, they will be readable and will indicate possible applications of the work discussed. We feel it important to publish such papers because they often present developments that will be used in the next wave of commercial graphics products.

Applications. Applications articles will describe innovative uses of computer graphics to solve specific problems. They will present technical detail of interest to the designer and implementer, but will also be comprehensible to the user. Indeed, the use of the word "applications" in the title of our magazine underscores our recognition of applications as the driving force behind computer graphics.

Practice. Articles on graphics practice will be based neither on a pyramid of research results nor on explorations of specific applications. Rather, they will present accumulated experience, general enough to be of interest to a large number of readers.

This issue contains articles reflecting the classification presented above. Several focus on CAD and engineering design. As existing systems continue to transcend "artwork" and move toward engineering design and manufacture, geometric representation and the human response to it become important issues. Frank Lillehagen's article (page 17) goes beyond the traditional discussion of the man-machine interface to explore the deeper issue of facilitating the design-conceptualization-analysis process. His approach to graphics systems reflects many years of government-sponsored research on CAD/CAM software. David H. W. Harris (page 57) provides insights into CAD training and practice in a high-technology industry—his views are based on his extensive experience in "making things work." For those interested in computer-aided geometric design, Brian A. Barsky presents a comprehensive guide to the literature of that field (page 67).

Jim George and Anders Vinberg address the problem of graphical representation of data (page 49). The question is not one of simply generating data, but of how to extract the pertinent information from that data. This problem will become critical in business and engineering applications as the volume of data requiring interpretation increases—without intelligent use of graphics, users may find themselves inundated.

This issue inaugurates several new features. A department called Selective Update, handled by Associate Editor Jerry Schneider, will feature industry news as well as short technical contributions. Our Displays on Display department will incorporate a new section conducted by Associate Editor Jim George, that will solicit reader solutions to specific display problems (see page 145). Selection of images for Displays on Display will now be handled by Frank Crow and Chuck Csuri, both of Ohio State University.

Associate Editor Carl Machover will edit the New Products section, and Associate Editor Bert Herzog will coordinate all book reviews.

This distribution of responsibility ensures the Editorial Board's commitment to the publication of articles and departments of high quality and broad appeal. Other associate editors are involved in planning special issues for 1982, when we will begin bimonthly publication.

It is interesting to note that the professional affiliations of our associate editors span all the major societies involved in computer graphics. Preliminary results from the reader survey conducted in our last issue indicate that our readers, who are also drawn from the major graphics societies, share many interests. In aggregate, we are not as different as we are sometimes led to believe. Hence, *IEEE CG&A* will continue to serve a readership we see as broad—and yet as having common interests—with pertinent discussions of theory, applications, and practice.