THEME FEATURES

10 Guest Editors' Introduction: Computer Graphics in Europe
   José L. Encarnação and Frank M. Lillehagen

12 A New Approach to Text and Image Processing
   Lars Blomberg, Kerstin Frenckner, Björn Kruse, Gunilla Lönemark, Staffan Romberger, and
   Yngve Sundblad
   By envisioning an "electronic table," it is possible to build a system model that employs the same
   conceptual tools and operations already used in traditional prepress graphics work.

26 A Method for Solving the Visibility Problem
   Christoph Hornung
   Faster solutions to 3-D visibility problems and better distribution of multiprocessor systems can be
   achieved when this new connectivity data algorithm is used.

35 Shaded Display of Digital Maps
   Sabine Coquillart and Michel Gangnet
   Improved techniques of surface interpolation, clipping, and hidden-surface elimination help solve some
   problems in generating perspective views of digital terrain data.

43 Using Interactive Graphics for Fitting Surfaces to Scattered Data
   Laura Bacelli-Montefusco and Giulio Casciola
   Robust software for reconstructing a surface from scattered data has been implemented in an
   interactive system with graphical facilities and with highly modular machine-independent structure.

47 Adding Structure to Bit-Map Displays
   Morten Zachrisen
   Interactive programming using "clever" look-up tables can cause application problems. This simple,
   recursive algorithm avoids difficulties by dividing a multiplane frame buffer into logical layers.

52 Solid Modeling and the Interface Between Design and Manufacture
   M. J. Pratt
   Many challenges must be faced before an automatic process-planning system will be practical for
   individual application—specifically, the recognition and simulation of a part's "form features."

SPECIAL FEATURES

60 Staking Out the Graphics Display Pipeline
   Ware Myers
   Pipelined architecture dramatically off-loads the host computer. Here's a quick look at how eight
   companies are applying this technology to graphics display.

66 A Comprehensive Light-Source Description for Computer Graphics
   Channing P. Verbeck and Donald P. Greenberg
   For realistic simulation it is necessary to thoroughly define and describe light-source characteristics—especially the light-source geometry and the luminous intensity distribution.

DEPARTMENTS

5 Letters to the Editor
7 About the Editor
77 New Products
86 Product Highlights
90 Application Briefs
91 Selective Update

Next issue:
94 Professional Calendar
95 Classified Ads
96 Advertiser/Product Index

Published by the IEEE Computer Society
in cooperation with
the National Computer Graphics Association

IEEE CS Membership Application, p. 46
Change-of-Address Form, p. 5
Reader Service Cards, p. 97