
Editorial

SPECIAL ISSUE: PROCEEDINGS OF THE RASTER IMAGING AND DIGITAL TYPOGRAPHY CONFERENCE

This issue of *Electronic Publishing* contains the papers presented during the third Raster Imaging and Digital Typography conference, held at Darmstadt, Germany, from 11 to 13 April 1994. Earlier conferences in the series took place in 1989 at Lausanne, Switzerland (organized by Roger D. Hersch, EPFL) and in 1991 at Boston, Massachusetts (organized by Robert A. Morris, University of Massachusetts at Boston). The corresponding proceedings are published by Cambridge University Press (see below, [page 307](#)).

Digital typography is a relatively new field: the first commercial cathode-ray-tube photo-composing machine appeared in 1966. Since that time, the field has been growing very fast, and is still active. During the RIDT'89 conference, emphasis was laid on the rasterisation of outline characters and on rendering techniques. RIDT'91 concentrated more on digital halftoning and on greyscale characters. However, both of these conferences bore in mind that beyond the mathematics of shapes and their rendering, printing types exist with their own aesthetic rules. That is why the presentations were made by a mix of technologists, scientists and designers.

The RIDT'94 programme committee tried to attract a similar mix of papers when this conference was launched. As expected, the fields have moved on since the last conference, but we hope that the selected papers adequately exhibit the present state of the art in raster imaging and digital typography.

In the recent past, formal research in digital typography has dealt with graphical algorithms, such as the rendering of outline characters and the generation of outline characters from bit-mapped drawings, to name but two. Present research focuses on models and methods for concise but precise font description and modelling. That trend began in industry with font interpolation programs and font systems such as Adobe Systems' Multiple Master technology. This research definitively belongs to computer science, with keywords such as *object orientation*, *regular expressions*, *string matching* and *shape parameterization*.

A look at related fields, such as computer-aided design, shows that there still remains plenty of mathematical research to be done in digital typography. Mathematics is already used in CAD to express aesthetic criteria, both at the local (individual curves/surfaces) and the global level, for ensuring overall appearance and design consistency.

Research presented at this conference shows that there is a connection between character shapes and formal languages. A special family of formal languages called *developmental languages* models the growth of plants, giving a uniform appearance to plants in synthetic images. These formal systems can also describe other shapes and objects. Their application to describing uniform character appearance within a font thus appears natural.

It is noticeable, too, that some of the graphic-design community's long-standing dissatisfactions with the established technology of contour character shape descriptions and

simple-minded rasterizing algorithms are beginning to be reflected in current research. Non-linear scaling of character dimensions according to character image size, and description methods which cooperate in the intelligent rasterization of character shapes, are discussed in papers presented here: both are topics which have been on typographers' wish-lists for a long time.

Setting up such a conference has required a lot of work and energy from a number of people. Our cordial thanks go to everyone involved in this task, including the Programme Committee members for their hard work in selecting and reviewing papers (with the help of anonymous additional experts), the organization committee (including personnel from INRIA, France and GMD, Germany) and the CAJUN and John Wiley and Sons Ltd. teams for their help in preparing these proceedings.

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