EurographicSeminars

Tutorials and Perspectives in Computer Graphics

Edited by W. T. Hewitt, R. Gnatz, and D. A. Duce

R. L. Grimsdale W. Straßer (Eds.)

Advances in Computer Graphics Hardware IV

With 124 Figures, 4 in Colour

Springer-Verlag
Berlin Heidelberg New York
London Paris Tokyo
Hong Kong Barcelona
Budapest

EurographicSeminars

Edited by W. T. Hewitt, R. Gnatz, and D. A. Duce
for EUROGRAPHICS -
The European Association for Computer Graphics
P. O. Box 16, CH-1288 Aire-la-Ville, Switzerland

Volume Editors

Richard L. Grimsdale
School of Engineering
University of Sussex
Brighton, BN1 9QT, U. K.

Wolfgang Straßer
Universität Tübingen
Wilhelm-Schickard-Institut für Informatik
Graphisch-Interaktive Systeme
Auf der Morgenstelle 10, C9
W-7400 Tübingen 1, FRG

ISBN-13: 978-3-642-76300-7 e-ISBN-13: 978-3-642-76298-7

DOI: 10.1007/978-3-642-76298-7

Softcover reprint of the hardcover 1st edition 1991

45/3140-543210 - Printed on acid-free paper

Preface

EUROGRAPHICS workshops on Graphics hardware have now become an established forum for an exchange of information concerning the latest developments in this field of growing importance. The first workshop took place during EG'86 in Lisbon. All participants in this event considered it a very rewarding workshop to be repeated at future EG conferences. This view was reinforced at the EG'87 Hardware Workshop in Amsterdam which firmly established the need for and a high interest in such a colloquium of technical discussion in this specialist area within the annual EG conference. The third EG Hardware Workshop took place in Nice in 1988 and this volume is a record of the fourth workshop at EG'89 in Hamburg.

The material in this book contains papers representing a comprehensive record of the contributions to the 1989 workshop.

The first part considers **Algorithms and Architectures** of graphics systems. These papers discuss the broader issues of system design, without necessarily raising issues concerning the details of the implementation.

The second part on **Systems** describes hardware solutions and realisations of machines dedicated to graphics processing. Many of these contributions make important references to algorithmic and architectural issues as well, but there is now a greater emphasis on realisation. Indeed many VLSI designs are described.

The contributions show that there is flourishing activity in the development of new algorithmic and architectural ideas. In particular, the interaction between the opportunities presented by VLSI technology, newly developed algorithms and the increasing diversity of applications encourage new solutions and keep graphics hardware a lively working area.

Finally, we should like to thank the members of the Programme Committee for their efforts invested in the planning of the workshop, the EUROGRAPHICS Association for supporting the event through scholarships, the Universität Hamburg and Werner Hansmann for hosting the event so excellently, and Kontron Elektronic for their generous sponsorship. Last, but not least, our thanks go to all the authors of this volume for the careful preparation of their contributions.

Richard Grimsdale, Wolfgang Straßer
Brighton and Tübingen, October 1990

Fourth Eurographics Workshop on Graphics Hardware

Workshop co–chairmen

Prof. Dr. W. Straßer, Institut für Informatik, Universität Tübingen
Prof. R.L. Grimsdale, School of Engineering, University of Sussex

Workshop Programme Committee

Table of Contents

Part 1. Algorithms and Architectures

Part 2. Systems