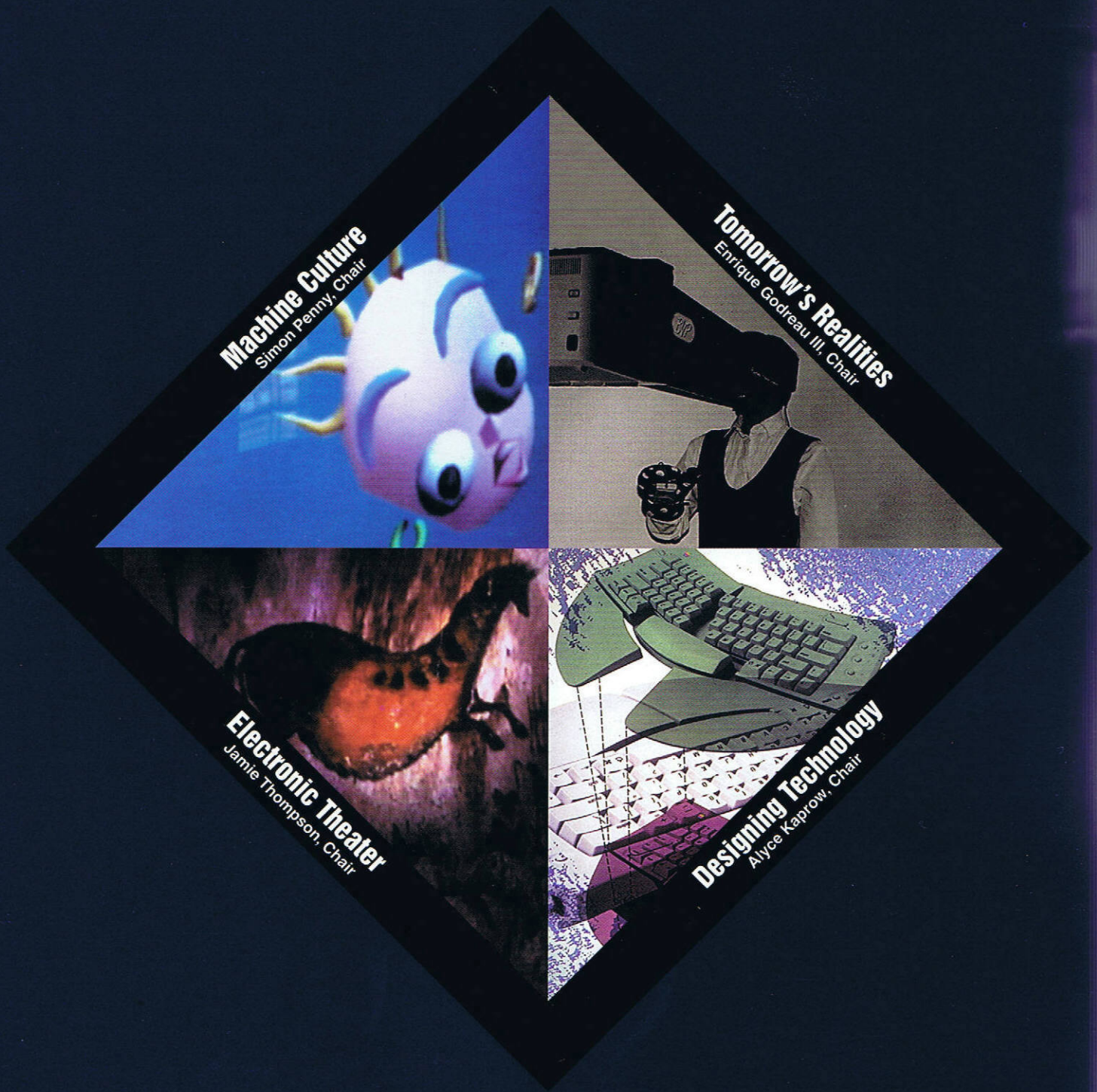
Visual Proceedings

THE ART & INTERDISCIPLINARY PROGRAMS OF SIGGRAPH 93



Computer Graphics Annual Conference Series, 1993

A Publication of ACM SIGGRAPH

Revised Second Printing

Thomas E. Linehan, Editor

Tomorrow's Realities Introduction

ENRIQUE GODREAU III

Tomorrow's Realities Committee Chair

Tomorrow's realities is a specially designed, non-traditional gallery that demonstrates the latest in new and emerging technologies and establishes a framework in which to consider the social, economic, cultural, and political implications of computer graphics. The exhibits not only recognize achievements in the computer graphics industry, but also raise awareness of the impact of these technologies. Attendees explore demonstrations in hypermedia and virtual reality as these media address such issues as computers in education and the mass media, cultural dissemination, changes in language and communication, and the emerging new media literacy.

For the past 20 years, SIGGRAPH has played a prominent role in the electronic visual communications revolution. This year, tomorrow's realities joins in the celebration of SIGGRAPH's 20th anniversary and provides the audience with an opportunity to witness the impact that computer graphics has had on people and the way they work, interact, and communicate both with computers and with each other. What separates this year's program from previous year's is the attention we have placed on providing more than simple technology demonstrations and encouraging you to consider the implications and opportunities of computer graphics. Our fondest hope is that as you tour the exhibit and reflect on what you see, hear, and feel you will be reinvigorated to participate in the development and dissemination of the technologies that bring us together and move us toward a global village.

The tomorrow's realities committee worked well as a group. We kept a keen focus on accepting submissions that were technically the best in their field yet also supportive of our overall thematic objectives. Our selection process involved assessing each submission individually with the following criteria: cultural, educational, entertainment, and social value; and originality, innovation, creativity, presentation of the finished piece; and significant technical advancement. We are very happy with the breadth of submissions in tomorrow's realities and are particularly pleased with the diversity of the presenters—from one-person studios to leading academic research facilities. Indeed, what better metric exists to measure global progress toward the technological realities of tomorrow than by reflecting on the origin and affiliation of this year's presenters. Please join us in the celebration of tomorrow's realities and the prospect for even broader, richer, and more effective visual communications technologies in the future!

Planning and presenting a program like tomorrow's realties is a significant task and one that could not be accomplished without numerous contributions from many, many people. First and foremost, I would like to acknowledge the support I have received from the Aldus Corporation during my involvement in this year's tomorrow's realities program. I would like to especially thank Mark Cutter, Dan Gallivan, and Skip Walter for their assistance. I would like to express my gratitude to the tomorrow's realities committee and the excellent work they have done to bring this all together. In particular, I must acknowledge the Herculean efforts of Colin Griffiths aimed at making this program a success. The production and general assistance provided by Garry Beirne was an invaluable asset, particularly during critical times in the project. Thanks to the SIGGRAPH 93 committee for the continuous support that allowed us to develop and deliver the message contained in this year's tomorrow's realities program. Priscilla Bell, my assistant, helped keep me on track and played a vital role in bringing all of the necessary pieces together. Finally, I would like to acknowledge the love and support of my wife, Lillian, who has survived being a SIGGRAPH Widow with honor. Honey, I'm coming home!

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Virtual Environments for Public Exhibitions

MARK BOLAS

Fakespace

To enlighten, educate, entertain, elevate: museums of art, science, and history have used many methods to achieve their goals, all of which are designed to entice and immerse the visitor in the experience presented. Virtual reality is ideal for this purpose, either as a tool, or as a new medium for public exhibition. This piece presents two examples of such systems, each highlighting different types of worlds that can be created. The first uses virtual environment technology to expand an existing museum mainstay, the diorama. The second explores the fundamental nature of virtual reality as a medium for public exhibition.

"Early North America: A Virtual Site Reconstruction" was created for the Smithsonian Institution's National Museum of American History by the Visual Information Technologies Program at George Mason University. This piece updates the purely visual and static experience of the 'diorama' into an interactive, immersive exhibit.

Before, the visitor might have walked past a series of scenes portraying specific aspects of American Indian life. Now, the visitor is actively involved in the exhibit when he or she moves the handles of the BOOM2C viewer, peeling back time, layer by layer, to see changes to an American Indian site over the years. This brings to the experience an interesting and enlightening juxtaposition of concrete and abstract, of visual and tactile, of silence and sound while learning about a culture's history and way of life.

"Tango Texture" was created by Fakespace Inc.'s Ian McDowall and Mark Bolas. Here, bits and pieces of our 'real world' everyday experiences are sampled, scrambled, and stapled onto the alien whitewashed landscape of the virtual environment. This is done through "texture mapping"—a process of pasting polygon-based models with flat photographs to create the illusion of a highly detailed model. This technique adds a powerful dimension to the palette of the virtual environment world designer. It enables the designer to convert surreal and often bland polygon-based worlds into rich and visually intricate places that are quickly accessible and immediately engaging for the visitor—an important requirement for public exhibition works. Using textures in non-traditional ways, this piece tries to converge the conventional with the unconventional, providing a perceptual conflict while retaining kinesthetic harmony.

Hardware and Software Providers

- George Mason University: custom software and world designs
- Fakespace, Inc.: BOOM, VLIB-SGI software, custom software and world designs
- Silicon Graphics, Inc.: SGI Reality Engine, IRIS Performer
- Software Systems: Multigen software

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