

Contents

Papers Preface
Panels Preface

Papers Sessions, Wednesday, 07 August 1996

8:00 - 10:00 SIGGRAPH 96 Keynote Address
1996 ACM SIGGRAPH Computer Graphics Achievement Award

10:15 - 12:00 Image-Based Modeling & Rendering
Chair: François Sillion

Modeling and Rendering Architecture from Photographs:
A Hybrid Geometry- and Image-Based Approach
Paul E. Debevec, Camillo J. Taylor, Jitendra Malik

View Morphing
Steven M. Seitz, Charles R. Dyer

Light Field Rendering
Marc Levoy, Pat Hanrahan

The Lumigraph
Steven J. Gortler, Radek Grzeszczuk, Richard Szeliski, Michael F. Cohen

1:30 - 3:45 Hierarchical Rendering Techniques
Chair: Frederick P. Brooks, Jr.

The Feudal Priority Algorithm on Hidden-Surface Removal
Han-Ming Chen, Wen-Teng Wang

Hierarchical Polygon Tiling with Coverage Masks
Ned Greene

Hierarchical Image Caching for Accelerated Walkthroughs of Complex Environments
Jonathan Shade, Dani Lischinski, David H. Salesin, Tony DeRose, John Snyder

Hierarchical View-dependent Structures for Interactive Scene Manipulation
Normand Brière, Pierre Poulin

3:30 - 5:15 Level of Detail
Chair: Kurt Fleischer

Interactive Multiresolution Surface Viewing
Andrew Certain, Jovan Popović, Tony DeRose, Tom Duchamp, David H. Salesin, Werner Stuetzle

Progressive Meshes
Hugues Hoppe

Real-Time, Continuous Level of Detail Rendering of Height Fields
Peter Lindstrom, David Koller, William Ribarsky, Larry F. Hodges, Nick Faust, Gregory A. Turner

Simplification Envelopes
Jonathan Cohen, Amitabh Varshney, Dinesh Manocha, Greg Turk, Hans Weber, Pankaj Agarwal, Frederick P. Brooks, Jr., William Wright

Papers Sessions, Thursday, 08 August 1996

8:15 - 10:00 Animation

Chair: Jessica Hodgins

Position-Based Physics: Simulating the Motion of Many Highly Interacting Spheres and Polyhedra
Victor J. Milenkovic

Linear-Time Dynamics using Lagrange Multipliers
David Baraff

Efficient Generation of Motion Transitions using Spacetime Constraints
Charles F. Rose, Brian Guenter, Bobby Bodenheimer, Michael F. Cohen

Limit Cycle Control and its Application to the Animation of Balancing and Walking
Joseph Laszlo, Michiel van de Panne, Eugene Fiume

10:15 - 12:00 Geometry

Chair: Jules Bloomenthal

SKETCH: An Interface for Sketching 3D Scenes
Robert C. Zeleznik, Kenneth P. Herndon, John F. Hughes

OBBTree: A Hierarchical Structure for Rapid Interference Detection
Stefan Gottschalk, Ming Lin, Dinesh Manocha

Free-Form Deformations with Lattices of Arbitrary Topology
Ron MacCracken, Kenneth I. Joy

Interpolating Subdivision for Meshes with Arbitrary Topology
Denis Zorin, Peter Schröder, Wim Sweldens

1:30 - 3:15 Storytelling

Chair: Richard Parent

Disney's Aladdin: First Steps Toward Storytelling in Virtual Reality
Randy Pausch, Jon Snoddy, Robert Taylor, Scott Watson, Eric Haseltine

Improv: A System for Scripting Interactive Actors in Virtual Worlds
Ken Perlin, Athomas Goldberg

The Virtual Cinematographer: A Paradigm for Automatic Real-Time Camera Control and Directing
Li-wei He, Michael F. Cohen, David H. Salesin

Comic Chat
David Kurlander, Tim Skelly, David H. Salesin

3:30 - 5:15 Reproduction/Postproduction

Chair: Gary Meyer

Reproducing Color Images as Duotones
Joanna L. Power, Brad S. West, Eric J. Stollnitz, David H. Salesin

A Model of Visual Adaptation for Realistic Image Synthesis
James A. Ferwerda, Sumanta N. Pattanaik, Peter Shirley, Donald P. Greenberg

Blue Screen Matting
Alvy Ray Smith, James F. Blinn

Combining Frequency and Spatial Domain Information for Fast Interactive Image Noise Removal
Anil N. Hirani, Takashi Totsuka

Papers Sessions, Friday, 09 August 1996

8:15 - 10:00 Samples & Textures

Chair: A. Robin Forrest

Consequences of Stratified Sampling in Graphics
Don P. Mitchell

Multiresolution Video
Adam Finkelstein, Charles E. Jacobs, David H. Salesin

A Cellular Texture Basis Function
Steven Worley

A Framework for Interactive Texturing on Curved Surfaces
Hans K hling Pedersen

10:15 - 12:00 Surface Reconstruction

Chair: Hans-Peter Seidel

A Volumetric Method for Building Complex Models from Range Images
Brian Curless, Marc Levoy

Fitting Smooth Surfaces to Dense Polygon Meshes
Venkat Krishnamurthy, Marc Levoy

Automatic Reconstruction of B-Spline Surfaces of Arbitrary Topological Type
Matthias Eck, Hugues Hoppe

Reconstructing Curved Surfaces From Specular Reflection Patterns Using Spline Surface Fitting of Normals
Mark A. Halstead, Brian A. Barsky, Stanley A. Klein, Robert B. Mandell

10:15 - 12:00 Architectures

Chair: Dave Kirk

Coarse-Grained Parallelism for Hierarchical Radiosity Using Group Iterative Methods
Thomas A. Funkhouser

Talisman: Commodity Realtime 3D Graphics for the PC
Jay Torborg, James T. Kajiya

VC-1: A Scalable Graphics Computer with Virtual Local Frame Buffers
Satoshi Nishimura, Toshiyasu L. Kunii

Rendering from Compressed Textures
Andrew C. Beers, Maneesh Agrawala, Navin Chaddha

1:30 - 3:15 Natural Phenomena

Chair: Greg Ward

Display of Clouds Taking Into Account Multiple Anisotropic Scattering and Sky Light
Tomoyuki Nishita, Yoshinori Dobashi, Eihachiro Nakamae

Modeling and Rendering of Metallic Patinas
Julie Dorsey, Pat Hanrahan

Visual Models of Plants Interacting With Their Environment
Radom r M ch, Przemyslaw Prusinkiewicz

Flow and Changes in Appearance
Julie Dorsey, Hans K hling Pedersen, Pat Hanrahan

1:30 - 3:15

Virtual Reality

Chair: Steven Feiner

Simulating Facial Surgery Using Finite Element Methods

*Rolf M. Koch, Markus H. Gross, Friedrich R. Carls, Daniel F. von Büren,
George Fankhauser, Yoav I. H. Parish*

Superior Augmented Reality Registration by Integrating
Landmark Tracking and Magnetic Tracking

Andrei State, Gentaro Hirota, David T. Chen, William F. Garrett, Mark A. Livingston

Technologies for Augmented-Reality Systems: Realizing Ultrasound-Guided Needle Biopsies

*Andrei State, Mark A. Livingston, William F. Garrett, Gentaro Hirota, Mary C. Whitton,
Etta D. Pisano, MD, Henry Fuchs*

Adding Force Feedback to Graphics Systems: Issues and Solutions

William R. Mark, Scott C. Randolph, Mark Finch, James M. Van Verth, Russell M. Taylor II

3:30 - 5:15

Illustration

Chair: R. Victor Klassen

Image-Guided Streamline Placement

Greg Turk, David Banks

Scale-Dependent Reproduction of Pen-and-Ink Illustrations

Mike Salisbury, Corin Anderson, Dani Lischinski, David H. Salesin

Rendering Parametric Surfaces in Pen and Ink

Georges Winkenbach, David H. Salesin

Painterly Rendering for Animation

Barbara J. Meier

Panels Sessions, Wednesday, 07 August 1996

10:15 - 12:00

The Future of Virtual Reality: Head Mounted Displays Versus Spatially Immersive Displays

Organizer: Ed Lantz

Panelists: Steve Bryson, David Zeltzer, Mark T. Bolas, Bertrand de La Chapelle, David Bennett

Art on the Web, the Web as Art

Organizer: Annette Weintraub

Panelists: Remo Campopiano, Nan Goggin, John F. Simon, Jr., Sharleen Smith

1:30 - 3:15

VRML: Prelude and Future

Organizer: Don Brutzman

Panelists: Mark Pesce, Gavin Bell, Andries van Dam, Salim AbiEzzi

Breaking the Myth: One Picture is NOT (Always) Worth a Thousand Words

Organizer: Nahum D. Gershon

Panelists: Robert Braham, David Fracchia, Andrew Glassner, Barbara Mones-Hattal, Russ Rose

3:30 - 5:15

Digital Stunt Doubles: Safety Through Numbers

Organizer: Jeff Kleiser

Panelists: Frank Vitz, Jeff Light, Shahril Ibrahim, Richard Chuang

Global Multi-User Virtual Environments

Organizer: Wolfgang Felger

Panelists: Lennart E. Fahlen, R. Bowen Loftin, Michael R. Macedonia, Gurminder Singh

Panels Sessions, Thursday, 08 August 1996

8:15 - 10:00 How Can SIGGRAPH Be More Effective in Promoting Computer Graphics?
Organizer: Nahum D. Gershon
Panelists: Alain Chesnais, Robert Ellis, Jose Luis Encarnaçao, Donald P. Greenberg

Webbed Spaces: Between Exhibition and Network
Organizers: Perry Hoberman, Victoria Vesna
Panelists: Ken Feingold, Stelarc, Lorne Falk, Laura Kurgan

10:15 - 12:00 Advanced Television for the United States: Status and Issues
Organizer: Gary Demos
Panelists: Alvy Ray Smith, Craig Birkmaier, Mark Richer, Glenn Reitmeier

The Soul of the Machine: The Search for Spirituality in Cyberspace
Organizers: Celia Pearce, Erik Davis
Panelists: Mark Pesce, Paul Godwin, Char Davies, Rita Addison

1:30 - 3:15 Issues in Networking for Entertainment, Graphics, and Data
Organizer: Marke Clinger
Panelists: Robert Amen, Ray Feeny, Chuck Garsha, Jim McCabe, Mark Valenti

3:30 - 5:15 Graphics PCs Will Put Workstation Graphics in the Smithsonian
Organizer: Samuel Uselton
Panelists: Michael Cox, Michael Deering, Jay Torborg, Kurt Akeley

Cognition, Perception, and Experience in the Virtual Environment: Do You See What I See?
Organizer: Linda Jacobson
Panelists: Charlotte Davies, Brenda Laurel, Creve Maples, Mark Pesce, Mark Schlager, Rob Tow

Panels Sessions, Friday, 09 August 1996

8:15 - 10:00 Virtual Reality and Mental Disorders
Organizer: Dorothy Strickland
Panelists: Larry Hodges, Suzanne Weghorst, Nat Durlach

10:15 - 12:00 Building Compelling VRML Worlds
Organizer: Delle Maxwell
Panelists: Clay Graham, David Blair, James Waldrop

12:00 - 1:30 Special Session: Springing into the Fifth Decade of Computer Graphics:
Where We've Been and Where We're Going!
Organizer: Carl Machover
*Panelists: Frederick P. Brooks, Jr., Edwin E. Catmull, Sylvan Chasen, Robert M. Dunn,
Bertram Herzog, Andries van Dam*

1:30 - 3:15 Live Computer Animation
Organizer: Tim Heidmann
Panelists: Ken Fuhrman, Tim Heidmann, Chuck Molyneaux

3:30 - 5:15 Imaging Features in Advanced Graphics Architectures
Organizer: Bob Murphy
Panelists: Randy Crane, Kurt Akeley, Steve Howell, Arie Kaufman