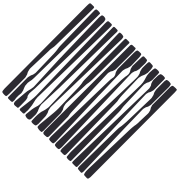
ACM SIGGRAPH VIDEO REVIEW



ISSUE 93

SIGGRAPH 93
Small Animation Theater
Science Reel

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Video Review

Issue 93

ACM SIGGRAPH 93
Small Animation Theater
Science Reel

1. knot[4]

Time: 00:03:31

Producer:
Andrew J. Hanson

Summary:
Computer graphics techniques are applied to the visualization of knotted and unknotted spheres in four dimensions.

Contributors:
Animation/Modeling: Brian Kaplan, Robert Cross, Hui Ma, Lie-Hwang Hwang; Video Production: Eric Ost; Audio Production: Dave Rust

Sponsors:
National Science Foundation, Indiana University

Hardware:
Silicon Graphics Crimson

Software:
Wavefront, proprietary

Copyright:
Indiana University

Contact:
Andrew J. Hanson
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812.855.4829 fax
hanson@cs.indiana.edu

2. JASON IV Real-Time Visualization

Time: 00:02:57

Producer:
Dave Pape, NASA/GSFC

Summary:
Jason is a remotely operated submersible used by the Woods Hole Oceanographic Institute. A visualization tool was developed to enhance remote research during a recent expedition. Jason's telemetry data was broadcast through the Internet in real time, allowing scientists across the country to observe the exploration in progress.

Contributors:
Chuck Molyneaux (SGI), Ken Stewart, WHOI

Hardware:
Silicon Graphics 4D/240 VGX

Software:
In-house GL code, Wavefront Modeler

Copyright:
Public domain

Contact:
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dave@okeefe.gsfc.nasa.gov

3. Timbre Trees

Time: 00:01:23

Producer:
James K. Hahn

Summary:
Timbre Trees are functional compositions of sound, analogous to shade trees. Genetic algorithms were used to mutate these trees, to generate sounds, and to allow the user to guide their evolutions. Parameters from a motion control system were used to drive the synchronization as well as the timbre of sounds.

Contributors:
James K. Hahn, Larry Gritz, Joe Geigel, Jong Won Lee, Tapio Takala

Hardware:
Silicon Graphics (Indigo, Crimson)

Software:
James K. Hahn, Larry Gritz, Joe Geigel, Jong Won Lee, Tapio Takala

Copyright:
George Washington University

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4. Reconstruction and Visualization of a Human Embryo Heart

Time: 00:07:19

Producer:
Kenneth Beckman

Summary:
This piece shows techniques for reconstructing and visualizing volumetric biomedical data obtained from serial sections. A heart of a five to six-week old embyro is reconstructed, using a digital blink comparator for section registration, and snakes, or interactive deformable contours, for segmentation. The resulting volume is rendered with a parallel volume ray-caster.

Contributors:
William Hsu, Ingrid Carlbom, Demetri Terzopoulos, Michael Doyle; Data courtesy of Adrianne Noe, National Museum of Health and Science

Hardware:
DECmpp/12000/Sx Model 100, DECstation 5000

Software:
In-house

Copyright:
Digital Equipment Corporation

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William Hsu
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hsu@crl.dec.com

5. New Life Forms Sighted in Toronto!

Time: 00:02:53

Producer:
Michiel van de Panne

Summary:
Given the physical design of a creature, it is possible to automatically discover many of the ways it can move. Some of the interesting gaits discovered for creatures are shown.

Contributors:
Eugene Fiume, Michael McCool

Sponsors:
Natural Science and Engineering Council of Canada, Information Technology Research Council of Ontario

Hardware:
Silicon Graphics 4D/35

Software:
Silicon Graphics GL with extra code for shadow-casting and compositing

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6. Animated Electronic Wiring Buck

Time: 00:02:57

Producer:
Tom Capizzi

Summary:
Ford Alpha Simultaneous Engineering proposes to use visualization to troubleshoot engineering databases prior to building a prototype.

Contributors:
Kevin Redding, John Ferguson

Sponsors:
Creative Industries, Ford Motor Company

Hardware:
Silicon Graphics

Software:
Wavefront; Aries; Creative Industries proprietary

Copyright:
Creative Industries, March 1993

Contact:
Tom Capizzi
Creative Industries
14661 Rotunda Drive
Dearborn, MI 48120
313.248.2865
313.248.2850 fax

7. Climatology of Global Stratospheric Ozone (1979-1991)

Time: 00:03:16

Producer:
Lloyd A. Treinish

Summary:
A strategy for qualitative presentation of the long-term evolution of global atmospheric phenomena is applied to thirteen years of daily spacecraft observations of Earth's ozone layer. The resulting animation illustrates the dynamics of stratospheric ozone and the morphology of the seasonal Antarctic ozone depletion.

Contributors:
Lloyd A. Treinish, IBM T. J. Watson Research Center

Hardware:
IBM POWER Visualization System

Software:
IBM Visualization Data Explorer

Copyright:

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NY 10548
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8. Air on the Dirac Strings

Time: 00:02:19

Producer:
Electronic Visualization Laboratory (EVL), University of Illinois at Chicago(UIC)

Summary:
A quantum mechanical system involving electrons is not brought back into exact coincidence with itself after it is rotated 360 degrees, while it is brought back into coincidence with itself after it is rotated 720 degrees. How can we visualize such a situation?

Contributors:
George Francis, Mathematics Department, University of Illinois at Urbana-Champaign (UIUC); Louis Kauffman, Mathematics Department, UIC; Daniel Sandin, EVL and Art Department, UIC; Computer graphics: Chris Hartman, Mathematics Department, UIC, and John Hart, EECS Department, Washington State University; Dance: Jan Heyn-Cubacub; Music: Sumit Das, EVL, UIC; Video: Dana Plepys, EVL, UIC

Special Thanks:
Thomas A. DeFanti, EVL, UIC; Larry Smarr, National Center for Supercomputing Applications, UIUC; Donna Cox, Renaissance Experimental Laboratory, UIUC; Randy Hudson, Alan Millman, Maggie Rawlings, EVL, UIC; Tony Baylis, Bob Patterson, National Center for Supercomputing Applications, UIUC

Hardware:
Silicon Graphics, AT&T Pixel Machine

Software:
C; GL; Raylib

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312.413.7585 fax

9. Visualizing Seafloor Structures with Satellite Altimetry

Time: 00:03:17

Producer:
James McLeod

Summary:
This video shows an ocean-floor model generated from gravity measurement data that was obtained by a satellite from an ocean region between Antarctica and New Zealand. Points of interest are examined as the viewer "swims through" the environment.

Contributors:
Chris Small, David Sandwell, Paul Lackey, JJ Jenkins, Harry Ammons

Sponsors:
NSF, SDSC, Scripps Institution of Oceanography

Hardware:
Silicon Graphics 4D/320 VGX

Software:

Wavefront TAV, SDSC internal code

Copyright:
Contact SDSC for release, 1992

Contact:
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San Diego Supercomputer Center
P.O. Box 85608
San Diego, CA 92186-9784
619.534.5158
619.534.5113 fax
mcleod@sdsc.edu

10. Biomechanics: Dynamics and Playback

Time: 00:03:36

Producers:
Gorka Alvarez, Alejandro Garcia-Alonso

Summary:
In the Barcelona Olympic Games, video images of some trials were recorded, and inverse dynamic analyses were computed using data digitized from those videos. This video provides a short explanation of the process used to produce the final images. The images are playbacks of some trials. They were generated using virtual cameras, and dynamic results are superimposed on them.

Contributors:
Pavel Urban, Nicolas Serrano, Javier Garcia de Jalon; Music: Logos (from Geometry), Robert Rich, BMI

Sponsor:
International Olympic Committee

Hardware:
Silicon Graphics 4D/240 VGX

Software:
Peak 5 (from Peak Performance Tech.), COMPAMM-SPORT (CEIT)

Copyright:
Public Domain

Contact:
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San Sebastian E-20009
Spain
34.43.212800
34.43.213076 fax

11. Advanced Visualization for Transportation Engineering

Time: 00:05:07

Producer:
Ken Seaverns, Doug Eberhard

Summary:
4D Imaging is the visualization department of Parsons, Brinckerhoff, Quade and Douglas, the top transportation engineering company in the U.S. These are some samples of their work.

Contributors:
John Barden, Paul Newton, Rob

MacLeod, Rod MacLeod, James Steele

Hardware:
486 PC

Software:
Topas, Tips

Copyright:
Parsons, Brinckerhoff/4D Imaging

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Denver, CO 80264
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303.832.9095 fax

Other Issues available:

ISSUE 90:

Special Issue
Compilation Reel

1. *Computer Imagery: Visions of the Electronic Frontier - Serra, Padderud*
2. *Robert Mallary - Pioneer in Computer Art - Giloth, West*
3. *SIGGRAPH '92 Showcase Documentation EVL, NCSA*

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SIGGRAPH 93
Small Animation Theater
Art Reel

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5. *Brilliant Days - Hsieh*
6. *air, water part 2 - Tonkin*
7. *The First Political Speech - Mah*
8. *The Allegory of the Cave - Kelley*
9. *Minute Georgienne - Mongeau*
10. *Power of Dreams - Kaul*
11. *Coup de Théâtre - Pasdeloup, Cazenave*
12. *Sintu - Popa*
13. *Cybercrazed - von Ruggins*
14. *Fantastic Dreams - Inakage*

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Electronic Theater

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3. *Go Fish! - University of Toronto*
4. *MEGALOPOLICE Tokyo City Battle Sega Enterprises, Ltd.*
5. *Heart Beat - Hokkaido University*
6. *Mercury - Brozsek*
7. *Doom and the Dog - Dagget*
8. *Stripe Box - Taiyo Kikaku Co., Ltd.*
9. *Fruit Tracing - Caltech*
10. *Studies for the Garden - Wallada Bioscop Ltd.*
11. *Rhapsody in Light & Blue - Hiroshima University*
12. *Michelob Golden Draft "Evolution" - Rhythm & Hues Studios*
13. *Sister of Pain - Vince Neil - Homer & Associates*
14. *Visualizing DNA Crystal Packing Interactions - The Scripps Research Institute*
15. *Pacific Data Images Montage - Pacific Data Images*
16. *Deus ex Machina - Georgia Institute of Technology*
17. *Walking Figure in Sight - Taiyo Kikaku Corporation*
18. *ODORO ODORO (The Mysterious Dance) - LINKS Corporation*
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20. *Video Supplement to the Conference Proceedings Hart, Blinn*
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24. *Legacy - Butts*
25. *Dr. Scratch - Mr. Film*
26. *JuJu Shampoo - MetroLight Studios*
27. *PDI "Toys" Visual Effects - Pacific Data Images*
28. *CAA-Coca-Cola Polar Bears - Rhythm & Hues Studios*
29. *Gas Planet - Pacific Data Images*
30. *GOKU - Magic Box Productions, Inc.*

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