Europe's leading Virtual Reality convention

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Virtual Environments '98

Conference and 4th Eurographics Workshop

held simultaneously with

IEEE YUFORIC Germany '98

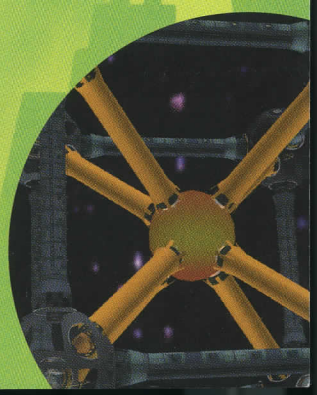
16 – 18 June 1998, Stuttgart, Germany

Program

98

Virtual Environments '98
is the leading European event for Virtual Environments research, technology and applications. The conference provides an international forum of high quality for the Virtual Reality community. Experts from both industry and research discuss the latest trends and ideas.
Virtual Environments '98 features paper presentations, panels, exhibitions, tutorials, industrial case studies, and demonstra-tions.

IEEE YUFORIC
The IEEE YUFORIC (Youth Forum in Computer Science and Engineering) brings students and young professionals together in a forum for exchanging ideas and sharing experiences.



Preface

Virtual Environments '98 is the leading European event for virtual reality (VR) technology and applications.
The congress provides an international forum of high quality for the VR developer and user community. Experts from both industry and research gather to discuss the latest trends and ideas. Virtual Environments '98 features technical paper presentations with the latest technology results, panels with industrial experts discussing business with VR, industrial case studies, demonstrations, and tutorials. In addition, an exhibition held in conjunction with the CAT – Computer Aided Technologies Fair shows the latest VR products.

Who should participate?
Anyone from industry, research, and academia who is currently working with virtual reality or is considering to use virtual reality.

Simultaneously with Virtual Environments '98, IEEE YUFORIC (Youth Forum in Computer Science and Engineering) provides a forum for excellent students and young professionals to demonstrate their work and discuss the latest ideas with experts in their field.

We are looking forward to welcoming you at the Stuttgart International Convention Center (Killesberg) and wish you a successful stay.

Conference Chairs

Prof. Hans-Jörg Bullinger,
Managing Director, Fraunhofer IAO

Prof. Rolf Dieter Schraft
Managing Director, Fraunhofer IPA

Tuesday, 16 June 1998 morning

9.00 – 10:00 Opening session:
Hans-Jörg Bullinger, Managing Director, Fraunhofer IAO, Germany
Advances in Bridging the Gap: Using Virtual Reality to Enhance Productivity

Rolf-Dieter Schraft, Managing Director, Fraunhofer IPA, Germany
Virtual Reality in Medicine: Developing the Visualization and Interaction Technology for the 21st Century

10.00 – 11.00 Session VRML 1:

P. Rea (British Telecom, UK)
Experiences from an Inhabited Television Experiment

S. Diehl (Univ. Saarbrücken, Germany)
Object-Oriented Animations with VRML++

D. Doegl (virtual real estate, Austria) and C. Cavallar
Organizing Information Using VRML

11.00 – 11.30 Break

11.30 – 12.30 Session Human Computer Interaction 1:

A. Huxor (Middlesex University, U.K.)
Grounding & Awareness Management: Two Architectural Principles for Collaborative Virtual Worlds

A. H. Bullinger (University of Basel, Switzerland)
3D-Virtual Reality as a Tool in Cognitive-Behavioral Therapy of Claustrophobic Patients

J. D. Mulder (Center for Mathematics and Computer Science CWI, The Netherlands)
Remote Object Translation Methods for Immersive Virtual Environments

12.30 – 13.30 Lunch break

11.30 – 12.30 IEEE YUFORIC demo session

10.00 - 11.00 Industry case studies

O. Caspers, EDV-Systeme-Thoma, Kaiserslautern, Germany
Advantages of Virtual Reality in Industry and Research 1

Th. Flaig, Fraunhofer IPA, Germany
Virtual Environment for Education and Training in Safety Engineering and Maintenance

11.00 – 11.30 Break

11.30 – 12.30 Industry case studies

Matthias Wapler, Jan Stallkamp, Mark Dürr, Volker Urban, Fraunhofer IPA, Germany
Using Virtual Reality in a Teleoperation System for Microsurgery

Jens Dauner, Fraunhofer IAO, Germany
Applying the Third Dimension in E-Commerce

12.30 – 13.30 Lunch break

Tuesday, 16 June 1998 afternoon

13.30 – 14.00 Keynote Talk:
Mark Mine, HCI Researcher, Disney Corp., USA
Making Virtual Worlds Work in a Real World

14.00 – 15.00 Panel: Advances in Medical Applications of Virtual Reality

Organizer: Matthias Wapler, Fraunhofer IPA, Germany
Participants: Volker Urban, Dr.-Horst-Schmidt-Hospital, Germany; Gerhard Bueß, Univ. Tübingen, Germany

Virtual Reality simulation and training as well as immersive teleoperation systems continue to be the focus of VR research in medicine. In the light of recent research results and first commercial systems, the panel will re-examine the short and long-term prospects of VR in medicine.

15.00 – 15.30 Break

15.30 – 17.00 Session Art 1

V. Lalioti (GMD, Germany), C. Garcia and F. Hasenbrink
Meet.Me@Cyberstage: Towards Immersive Telepresence

R. Nakatsu (ATR Media Integration and Communications Research Laboratories, Japan), N. Tosa and T. Ochi
Interactive Movie: a Virtual Environment with Narratives

D. Lu (Zhejiang University, PR China) Y. Pan, Z. Gong and X. Li
A Virtual Art Cave Navigation System Based on VE Technology

17.00 – 18.00 Break

18.00 – 18.45 Keynote talk: Creation of Virtual Theater - Interactive Poem and Interactive Cinema

Naoko Tosa, Artist, and Ryohei Nakatsu, Director, Advanced Telecommunications Research, Japan

18.45 – 20.00 Conference Buffet

14:00 – 15:00 Panel: Virtual Reality in the telecommuncations industry – current state and future

Organizer: Jürgen Landauer, Fraunhofer IAO, Germany
Participants: Yoichi Kato, NTT Human Interface Laboratories, Japan; Ola Odegard, Telenor, Norway; Paul Rea, British Telecom, UK; N.N., Deutsche Telekom, Germany

Distributed virtual Worlds, projects linking broadcast media such as TV with virtual worlds, and virtual chat spaces show that virtual reality technologies enable telecommunications industries to provide new content for their networks.

15.00 – 15.30 Break

15.30 – 17.00 Session Industry Solutions 1

K. Börner (University of Bielefeld, Germany), I. Wachsmuth and R. Fehr
AkuVis-Interactive Visualization of Acoustic Data

J. Bergbauer (Fraunhofer IFF, Germany) and D. Scheffter
MOD!FACT- A software for human integrated factory planning and process optimization

B. Lutz (Fraunhofer IGD, Germany) and R. Ziegler
VR Geo – Planning Tool for the Redevelopment of Landscape

17.00 – 18.00 Break

14.00 – 15.00 and
15.30 – 17.00: IEEE YUFORIC demo session

9.00 – 9.30 Keynote Talk: Teraflop Visualization
Arthurine R. Breckenridge, Director, Sandia National Laboratories, USA

9.30 – 11.00 Session VRML 2

L. Gebase (National Institute of Standards and Technology, USA), M. Brady, A. Dima and L. Rosenthal
VRML Test Case Generation and Evaluation Using Java

H. Boenisch (University of Ulm, Germany), S. Fiedler and K. Froitzheim
Visualizing the User Space of the WWW with VRML

C. Seiler (Fraunhofer-Institute for Computer Graphics, Germany) and A. Schäfer
MUSyC: Scaleable Multi-User Virtual Environments based on VRML

11.00 – 11.30 Break

11.30 – 12.30 Panel: VR – The Future Engineering Workplace: A European Perspective

Organizer: Max Lemke, EU Commission, Brussels
Participants: Pierre Bouchon, Syseca, France; Franz Klimetzek, Daimler Benz, Germany; M. Gomez-Molinero, CASA, Spain; N.N., Holland

Reaching the end of their pioneering ages, Virtual Reality technologies are expected to become increasingly important in the daily working environments of the engineer. The current status of VR related research within the Information Society Technologies Programme of the European Commission's 5th Framework Programme will be presented.

12.30 – 13.30 Lunch break

9.30 – 11.00 Industrial case studies

Oliver Caspers, EDV-Systeme-Thoma, Kaiserslautern, Germany
Advantages of Virtual Reality in Industry and Research 2

Christoph Stratmann, Art + Com, Germany
Virtual Reality Marketing Examples Window into Virtuality

11.00 – 11.30 Break

11.30 – 12.30 Industry case studies

to be announced

12.30 – 13.30 Lunch break

13.30 – 14.00 Keynote talk:
New Trends in Virtual Environment UI research
Toni Emerson, Director, HITLab, University of Washington, USA

14.00 – 15.00 Panel: Using VR in the automotive business
Organizer: Ulrich Lang, RUS Univ. Stuttgart, Germany
Participants: P. Zimmermann, Volkswagen; N.N., Daimler-Benz; N.N. BMW
It was not until 1996 that the automotive industry fully understood the potentials of VR technology for both designing and manufacturing new products. Since then, however, the use of VR appears to have become a fixed element in the car industry.

15.00 – 15.30 Break

15.30 – 16.30 Session Human Computer Interaction 2
D. Y. Cheng (Philips Multimedia Center Palo Alto, USA)
Design of a Virtual Environment that Employs Attention-Driven Interaction and Prioritization
M. Slater (University College London, UK) and A. Steed
The Virtual Ante-Room: Assessing Presence through Expectation and Surprise
H. K. Distler (Max-Planck-Institute for Biological Cybernetics, Germany)
Navigation in Real and Virtual Environments: Navigating a Virtual Landscape

16.30 – 17.00 Break

17.00 – 18.00 Session Distributed Virtual Environments
O. Odegard (Telenor Research and Development, Norway)
Distributed Virtual Environments (VE) and new forms of Collaboration
P. Benölken (University of Stuttgart, Germany), R. Niemeier and U. Lang
Collaborative Volume Rendering in a Distributed Virtual Reality Environment
V. Kindratenko (University of Illinois, USA) and B. Kirsch
Sharing Virtual Environments over a Transatlantic ATM Network in Support of Distant Collaboration in Vehicle Design

14.00 – 15.00 Panel: Virtual Environments for Geoscientific Data Visualization
Organizer: R. Bowen Loftin, Univ. of Houston, Texas, USA
Participants: Bernd Fröhlich, GMD; John Hybertsen, Statoil; William Kowalik, Chevron; Christoph Ramshorn, Schlumberger Austin Research
Geoscientists must collect, analyze, and comprehend vast amounts of multivariate data in the search for and characterization of hydrocarbon reservoirs. This panel will explore the issues of data visualization in the geosciences and describe ongoing virtual environment research and development intended to address these issues.

15.00 – 15.30 Break

15.30 – 16.30 Session Industry Solutions 2
R. Eisinger (University of Stuttgart, Germany), E. Göde, D. Rantzau, A. Ruprecht and U. Wössner
Analyzing Draft Tube Characteristics for Hydraulic Turbines in a VR Environment
A. Saad (University of Dresden, Germany) and T. Lechler
Application Potential for Virtual Reality in the Engineering Industry
R. Wortmann (Heinz Nixdorf Institut, Germany) and M. Grafe
Layout Planning of Manufacturing Systems with VR-based Construction Sets

16.30 – 17.00 Break

17.00 – 18.00 Session VR in Architecture
F. Pittarrello (University of Venice, Italy)
Architecture and Digital Exhibitions – The Einstein Tower World
D. A. Campbell (HIT-Lab, USA)
Virtual Architecture as Hybrid: Conditions of Virtuality Vs. Expectations
P. Rutherford (University of Strathclyde, UK)
The Development of an Audition based Building Egress Aid using Virtual Acoustic Prediction Techniques

9.00 – 10.30 Session Virtual Humans

S.Balcisoy (Swiss Federal Institute of Technology Lausanne, Switzerland) and D. Thalmann
Hybrid Approaches to Interactions between Real and Virtual Humans in Mixed Environments

F. Hara (Science University of Tokyo, Japan), H. Kobayashi and F. Iida
An Interactive Robot Able to Create Virtual Communication with Human

R. Lippmann (IST GmbH, Germany) and A. Rößler
Virtual Human Models in Product Development

10.30 – 11.00 Break

11.00 – 12.30 Session VR Systems Research 2

M. Park (Korea Institute of Science and Technology, Korea), H. Ko and H. Byun
Automatic Facial Expression Composition from Base Faces

M. Abdelguerfi (University of New Orleans, USA), R. Ladner and K. Shaw
3D Synthetic Environment Representation Using a Non-Manifold Data Structure

M. Cohen (University of Aizu, Japan) and J. Herder
Symbolic Representations of Exclude and Include for Audio Sources and Sinks: Figurative Suggestions of Mute/Solo & Cue and Deafen/Confide & Harken

12.30 – 13.30 Lunch break

9.00 – 10.30 am Session VR Systems Research 1

R. Blach (Fraunhofer IAO, Germany), J. Landauer, A. Rösch, and A. Simon
A flexible Protoyping Tool for 3D Realtime User-Interaction

F. Dong (Zhejiang University, China) and J. Shi
Multiresolution Display for Irregular Volume Data

A. Fuhrmann (Vienna University of Technology, Austria)
Strolling Through Cyberspace with Your Hands in Your Pockets: Head Directed Navigation in Virtual Environments

10.30 – 11.00 Break

11.00 – 12.30 Session Art 2

M. Meadows (ZKM Karlsruhe, Germany) and L. Hershman
The Virtual Museum

A.Best (Meet Factory Oy, Finland) and M. Puustinen
Conversation with Angels

C. Brandt (University of Paderborn, Germany) and K. Mayer
"The Virtual Endeavour" – a VR Gallery Application for Remote Multimedia Data Access

12.30 – 13.30 Lunch break

13.30 – 17:30 Tutorial 1:
Handling of Very Large 3D-Surface-Datasets Using Mesh Simplification and Multiresolution Modeling

Reinhard Klein, Univ. Tübingen, Dept. of Computer Graphics

Level: Intermediate-Advanced
Length: half-day

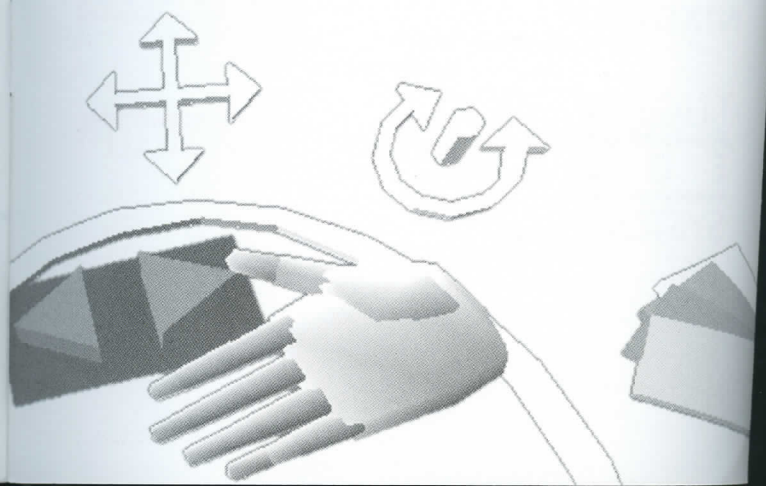
Serious engineering tasks like car design or aircraft design produce databases with millions of polygons that cannot be handled reasonably with available graphics systems. One approach to solve these problem is the use of mesh simplification techniques and multiresolution modeling.
This course gives an overview over the current techniques for simplifying complex polygonal surface models. Different data structures of multiresolution models containing the 3D-object at multiple levels of detail are discussed. Viewing and lighting dependent refinement of polygonal surfaces will be covered. Furthermore, compression techniques for multiresolution representations are presented. All subjects are illustrated by different applications from CAD, GIS, VR and the Web. Life demonstrations from these applications will be given.

13:30-17:30 Tutorial 2:
Creating Attractive Internet-Based Virtual Worlds With VRML (Virtual Reality Modeling Language)

Jens Dauner, Fraunhofer IAO, Stuttgart

Level: Beginning-Intermediate
Length: half day

The Virtual Reality Modeling Language has become an ISO standard for distrubuting interactive 3D environments over the Internet. This tutorial explains how VRML can be used to create compelling and attractive worlds in fields such as product presentation, documentation, and marketing. Topics include user interfaces, bandwidth issues, realism, etc.



Registration

Please fill out the following form and send it to:

Postal Mail: M. Rehpenning
Fraunhofer IAO
Nobelstrasse 12
70569 Stuttgart, Germany
Phone: +49-711-970-2188 Fax: +49-711-970-2299
E-Mail: tagungsbuero@iao.fhg.de

Virtual Enviroments '98 / IEEE YUFORIC Registration

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Organization

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Check here:

☐ I would like to attend Virtual Environments '98 and I am a member of

	Admission Fee
☐ Eurographics	DM 500
☐ IEEE Computer Society	DM 500
☐ none of above	DM 700

My Eurographics/IEEE membership number: _____

☐ I would like to attend IEEE YUFORIC 98

	Admission Fee
☒ flat rate for all	DM 60

☐ I would like to attend tutorial(s) no. _____and ____ (enter number(s) here)

	Admission Fee
each	DM 200

Hint: Attendants of Virtual Environments are allowed to attend all YUFORIC sessions at no extra charge. Attendants of IEEE YUFORIC are allowed to attend plenary sessions of Virtual Environments, but no other sessions such as paper or panel sessions, etc. All attendants are allowed to attend the exhibition. Space may be limited, so booking is done on a first-come-first-served basis.

Date

Your signature

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Registration

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Your admission fee must be received prior to the conference. A receipt will be sent to you. German consumption tax (MWSt) does not apply
A change of participants may be made in writing at any time and is free of charge.

For Virtual Environments, cancellations received by 1st June 1998 will be charged DM 100,–. Cancellations received thereafter will be subject to the full fee. For IEEE YUFORIC, cancellations are not possible.

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