

2010 JOINT VIRTUAL REALITY CONFERENCE
OF EUROVR - EGVE - VEC

7. GI WORKSHOP »VIRTUELLE UND
ERWEITERTE REALITÄT«



MIT FREUNDLICHER UNTERSTÜTZUNG



Wirtschaftsförderung
Region Stuttgart

FpF

Verein zur Förderung
produktionstechnischer Forschung e.V., Stuttgart



Fraunhofer
IAO



Eurographics
EUROPEAN ASSOCIATION FOR COMPUTER GRAPHICS

VIRTUAL DIMENSION CENTER



JVRC PROGRAM OVERVIEW

Monday, September 27

GI AR/VR
Workshop
Location: Uhlandsaal

Lunch Break

Display

System-
architekturen

Tuesday, September 28

GI AR/VR
Workshop
Location: Uhlandsaal

Victoria Interrante
»Spatial Perception
and Presence in
Immersive
Virtual Environ-
ments«

Interaktion

EUVR
SIGS

Tutorial:
Developing VR
Applications with
the inVRs
Framework

Tut & WS
Location: Room Kepler

Lunch Break

Interfaces &
Immersion

Tutorial: Walking
Experiences in
Virtual Worlds

Exhib.

Wednesday, September 29

JVRC
Scientific Track

Greg Welch
UNC, »Physical Manifestations
of Virtual Humans«
Location: Uhlandsaal

Interaction
Location: Uhlandsaal

JVRC
Industry Track

Communication &
Marketing
Location: Room Daimler

Exhib.

Lunch Break

Poster Presentation
Location: Exhibition Area

Software &
Collaborative VEs
Location: Uhlandsaal

Simulation &
Training
Location: Room Daimler

Exhib.

Conference Dinner
@ Stuttgarter Wilhelma (Zoo)

Thursday, September 30

JVRC
Scientific Track

Shanker Trivedi
NVIDIA VP World Wide Sales / PSG
Location: Uhlandsaal

Engineering Applications 1
Location: Uhlandsaal

JVRC
Industry Track

Telepresence
Location: Uhlandsaal

Construction &
Architecture
Location: Room Daimler

Lunch Break

Displays &
Rendering
Location: Uhlandsaal

Engineering
Applications 2
Location: Room Daimler

Exhib.

Exhibition
Get Together

Friday, October 1

Track:
VR für Einsteiger
Location: Room Kepler

VR
Einführung &
Überblick

3D Content

Track: VR für
Fortgeschrittene
Location: Room Daimler

Medien und
Projektionstechnik

Interaktions-
technik

Lunch Break

EUVR
SIGS

Workshop:
Virtual Avatars:
Seeing Ourselves in
Virtual Reality
*Location:
Room Heuss-Knapp*

Tut &
WS

Lab Visit:
The Cyberneum
at MPI for Biological
Cybernetics,
Tübingen

Exhib.



MONDAY, SEPTEMBER 27

7. GI Workshop | Location: Uhlandsaal | Language: German

WELCOME TO JVRC 2010!

In 2010, the 16th Eurographics Symposium on Virtual Environments, the 7th EuroVR (INTUITION) Conference, and the annual Virtual Efficiency Congress are merged together into the JVRC 2010 – Joint Virtual Reality Conference of EuroVR – EGVE – VEC.

JVRC 2010 will provide an opportunity for virtual reality researchers, engineers, and users to interact, share new results and new applications, show live demonstrations of their work, and discuss emerging directions for the field.

We were able to bring together different communities, users, suppliers, and researchers in a full week of opportunities. The week starts with the 7th Workshop »Virtuelle und Erweiterte Realität« of the GI and will be succeeded by the JVRC Conference with a scientific and an industrial track. On Friday, the Virtual Efficiency Congress which addresses local industry and suppliers will conclude the series. The week will be accompanied by an exhibition with industrial products and lab prototypes which show the recent state of the art up close.

We hope you enjoy the conference.

The co-chairs of JVRC 2010

12:00 **Registrierung**

13:45 – 14:00 **Opening**

Christian Bohn, Roland Blach

14:00 – 16:00 **Session 1: Displays**

Chair: Bernhard Jung

OctaVis: A Simple and Efficient Multi-View Rendering System
Eugen Dyck, Holger Schmidt, Mario Botsch

Automatic blending for arbitrary-shaped projection surfaces
Jérémie Gerhardt, Manuel Schiewe, Silvio Peikert, Stefan Klose

Multiple View Generation for Auto-Stereoscopic Displays
Stephan Beck, Mathias Schneider, Bernd Fröhlich

AutoCalib3D: Constraint-basierte, automatische Kalibrierung von Multiprojektorsystemen bezüglich markerloser Projektionsflächen
Stefan Klose

16:00 – 16:15 **Coffee Break**

16:15 – 17:15 **Session 2: Systemarchitekturen**

Chair: Carsten Matysczok

Ein konfigurierbares World-Interface zur Kopplung von KI-Methoden an Interaktive Echtzeitsysteme
Dennis Wiebusch, Marc Erich Latoschik, Henrik Tramberend

ISReal: Simulation of intelligent virtual humans in interactive environments
Pascal Liedtke, Stefan Warwas, Stefan Nesbigall, Hilko Hoffmann, Philipp Slusallek

TUESDAY, SEPTEMBER 28

7. GI Workshop | Location: Uhlandsaal | Language: German

- 9:00 – 10:00** Keynote: Spatial Perception and Presence in Immersive Virtual Environments
Victoria Interrante, University of Minnesota
- 10:00 – 12:00** **Session 3: Interaktion**
Chair: Marc Latoschick
- Navigating and Selecting in the Virtual Supermarket:
Review and Update of Classic Interaction Techniques
*Patrick Renner, Timo Dankert, Dorothe Schneider,
Nikita Mattar, Thies Pfeiffer*
- 3D-Manipulationstechnik für mobile Endgeräte mit
berührungssensitivem Bildschirm
*David Donszik, Bastian Lengert, Gerd Bruder, Klaus Hinrichs,
Frank Steinicke*
- Iteratives Mixed-Reality-Prototyping und virtuelle
Studiopräsentation einer Steuerung für ein Indoor-Luftschiff
Patrick Pogscheba, Jörg Stöcklein, Jens Herder, Christian Geiger
- Intuitives zweihändiges Arbeiten in der virtuellen Realität
Ronny Franke, Matthias Koch, Sophie Stellmach, Raimund Dachselt
- 12:00 – 14:00** **Lunch Break**
- Möglichkeit zur Ausstellungsbesichtigung**
Die Ausstellung ist ab Mittag geöffnet / Exhibition starts at noon

- 14:00 – 16:00** **Session 4: Interfaces & Immersion**
Chair: Sina Mostafawy
- Entwicklung einer Benutzungsschnittstelle für das virtuelle
Erleben von Fahrzeugeigenschaften
Jan Jacobs, Michael Stengel, Raimund Dachselt
- Unifikationbasierte Sprach-Gesten-Fusion für multimodale VR/
AR-Schnittstellen
Lutz Lukas, Felix Schwägerl, Marc Erich Latoschik
- Auswirkungen biokularer Videobilder als Selbst-Repräsentation
des Benutzerkörpers auf Präsenzgefühl und Distanzwahrnehmung
in Head-mounted Display Anwendungen
Annika Busch, Frank Steinicke, Gerd Bruder, Klaus Hinrichs
- Therapie von Phantomschmerz durch interaktive immersive VR/AR
*F. Bach, J. Buschmann, B. Schmitz, H. Maaß, H. Cakmak, M. Diers,
J. Foell, S. Kamping, H. Flor*
- 16:15 – 16:30** **Closing & Best Paper Award**
Christian Bohn, Roland Blach
- 16:45 – 18:00** GI AR/VR Lenungskreis (Raum Kepler)

WEDNESDAY, SEPTEMBER 29

JVRC Scientific Track | Location: Uhlandsaal | Language: English

JVRC Industry Track | Location: Room Daimler | Language: English

9:00 – 9:15 Opening

Roland Blach Fraunhofer IAO, Christoph Runde VDC,
Anthony Steed UCL

9:15 – 10:15 **Keynote: Physical Manifestations of Virtual Humans**
Greg Welch, University of North Carolina at Chapel Hill

10:15 – 10:30 Coffee Break

10:30 – 12:30 **JVRC Scientific Track**
Location: Uhlandsaal

Session: Interaction

Chair: Victoria Interrante,
University of Minnesota

Automated Positioning of Annotations in Immersive Virtual Environments
Sebastian Pick, Bernd Hentschel,
Irene Tedjo-Palczynski, Marc Wolter,
Torsten Kuhlen

The Effect of Varying Path Properties in Path Steering Tasks
Lei Liu, Robert van Liere

Touching Floating Objects in Projection-Based Virtual Reality Environments
Dimitar Valkov, Frank Steinicke, Gerd Bruder, Klaus Hinrichs, Johannes Schöning, Florian Daiber, Antonio Krüger

12:30 – 13:30 Lunch Break

JVRC Industry Track
Location: Room Daimler

Session: Communication & Marketing

Chair: Jerome Perret,
Haption

Training on Automation Systems
Karras, Festo didactic

Immersive Virtuality (iV) in Use for Advertising of Consumer Products
David Nahon, Dassault Systems

A VR Configurator for Prefab Houses
Matthias Bues, Fraunhofer IAO

13:30 – 14:30 Poster and Lab-Presentations

14:30 – 15:00 Coffee Break

15:00 – 17:00 Session:

Software & Collaborative VEs

Chair: Oliver Staadt, University of Rostock

Short Paper: Engineering Real-time Interactive Systems: Coupling & Cohesion of Architecture Mechanisms
Marc Erich Latoschik,
Henrik Tramberend

A New Adaptive Data Distribution Model for Consistency Maintenance in Collaborative Virtual Environments
Cédric Fleury, Thierry Duval, Valérie Gouranton, Bruno Arnaldi

Short Paper: Design Tools, Hybridization Exploring Intuitive Interaction
Robert E. Wendrich

Gesture Coordination in Collaborative Tasks through Augmented Feedthrough
Jean Simard, Mehdi Ammi

Short paper: Study of Synchronous and Collocated Collaboration for Search Tasks
Jean Simard, Mehdi Ammi

Session:

Simulations & Training

Chair: Patrick Bourdot,
LIMSI-CNRS

Spatially AR for the Automotive Industry: Efficiently Training Dexterous Gestures
Florian Schramm, CEA

A Distributed Architecture for Software-In-the-Loop Haptic-Enabled Cockpit Simulation
Jerome Perret, Haption

A Virtual Reality-based Simulator for Avionic Digital Service Platforms
Sven Strothoff, University Münster

VR enhanced Human-Centered Investigation in Virtual Factories
Xiang Yang, TU Kaiserslautern

18:30 – 23:00 **Conference Dinner @ Stuttgarter Wilhelma**
(bus transfer will be organized)

- 9:00 – 9:45** **Keynote NVIDIA**
Shanker Trivedi NVIDIA VP World Wide Sales / PSG
- 9:45 – 10:30** **VR visualization systems – current trends and upcoming possibilities**
Daniel Banek, Barco
- 10:30 – 11:00** **Coffee Break**
- 11:00 – 12:30** **Session: Engineering Applications 1**
Chair: Philippe Gravez, CEA
- Virtual Reality : A Tool for Aeronautical Engineering
Francois Guillaume, EADS
- VR Applications at Airbus
Oliver Zeplin, Airbus
- Interactive Plausible Illumination for the Digital Factory
Franz Peschel, Daimler
- Point-of-Sales VR Systems
Ralf Heß, Opel
- 12:30 – 13:30** **Lunch Break**
- 13:30 – 15:00** **JVRC Scientific Track**
Location: Uhlandsaal
- Session: Telepresence**
Chair: Martin Hachet, LaBRI - INRIA
- A Further Assessment of Factors Correlating with Presence in Immersive Virtual Environments
Lane Phillips, Victoria Interrante, Michael Kaeding, Brian Ries, Lee Anderson

- JVRC Industry Track**
Location: Room Daimler
- Session: Construction & Architecture**
Chair: Günter Wenzel, Fraunhofer IA0
- VR for buliding the Center of Virtual Engineering
Marc Herschel, unstudio

- Short Paper: Virtual Storyteller in Immersive Virtual Environments Using Fairy Tales Annotated for Emotion States
Iva V. Alexandrova, Ekaterina.P. Volkova, Uwe Kloos, Heinrich H. Bülthoff, Betty J. Mohler
- The ExtendedWindow Metaphor for Large High-Resolution Displays
Malte Willert, Stephan Ohl, Anke Lehmann, Oliver Staadt
- Construction Applications in COSPACES
Terrence Fernando, University of Salford
- Digital Engineering: Aspects of Reverse Engineering & VR for Chemical Plants
Axel Franke, BASF
- VR in architecture – methods, benefits and chances
Steffen Klingler, KOP

15:00 – 15:30 **Coffee Break**

- 15:30 – 16:40** **Session: Displays & Rendering**
Chair: Bernd Fröhlich, Bauhaus Universität Weimar
- Improving Photon Mapping Towards an Interactive Stage Lighting Framework
Tom Vierjahn, S. Meik, Sina Mostafawy, Christian A. Bohn
- Short Paper: Approximating Distance Fields in Image Space
Fabian Scheer, Mario Marschner, Stefan Müller
- Short Paper: User study for Mobile Mixed Reality Devices
Anne-Kathrin Braun, Rod McCall
- Session: Engineering Applications 2**
Chair: Angelos Amditis, ICCS
- Virtual Reality as an Integral Part of Product Lifecycle Management
Ingolf Rehfeld, nVIZ UG
- Industrial cases of human-machine interaction design and evaluation by exploiting VR and AR
Kaj Helin, VTT
- TAS-I industrial use cases and ManuVAR Project VR & AR potentialities and innovations
Enrico Gaia, Thales-Alenia

- 16:45 – 17:00** **Closing JVRC**
Roland Blach Fraunhofer IA0, Christoph Runde VDC

- 17:00 – 19:00** **Exhibition Get Together**

TRACK: VR FÜR EINSTEIGER

Location: Room Kepler

8:30 – 9:30 Überblick VR- Einsatzgebiete, Potenziale, Techniken

VR im Anwendungsfeld Engineering
Frank Haselberger, Fraunhofer IAO

Hardware, Software, Prozess-Integration – Prioritäten richtig setzen
Dr. Andreas Wierse, VISENSO GmbH

9:30 – 11:00 Einführung VR – Handlungsfelder, Erfolgsfaktoren

Potentiale durch VR als Querschnittsplattform
Ralf Breining, ICIDO GmbH

Hemmnisse und Erfolgsfaktoren der VR-Implementierung
Dr. Christoph Runde, VDC Fellbach

Einführung von Virtual Reality und Echtzeitvisualisierung anhand von Beispielprojekten
Markus Fimpel, Lumiscaphe

11:00 – 11.30 Coffee Break

Die Ausstellung schließt nach dem Mittagessen / Exhibition closes at noon

TRACK: VR FÜR FORTGESCHRITTENE

Location: Room Daimler

Medientechnik- Infrastruktur, Verkabelung, Mediensteuerung

Planen mit Kabel und Strippe – Eine VR-Umgebung gezielt strukturieren und kostenbewusst budgetieren
Florian Knoll, dav-it

Strategisch VR-Hardware planen und einsetzen
Dr. Ulrich Häfner, imsys Immersive Systeme

3D-Projektionstechnik – Technologien

Innovationen in der 3D Projektion
Rudolf Seeböck, projectiondesign

Multimedia 3D und VR – Konsumerprodukte beflügeln VR-Systeme
Tankred Magg, imsys Immersive Systeme

Maximale Auflösung, hoher Kontrast, homogenes Bild – Die MegaCADWall des Daimler Design Centers Sindelfingen
Daniel Banek, Barco GmbH

3D-Contenterstellung Methoden und Lösungen

3D-Content: Mode oder Muss?
Michael Grupp, Kerler Kommunikation

Funktionen und Prozesse animiert visualisieren
Gerold Straub, Animotion Media

3D Produktkonfiguration – Praxis und Prozesse
Marc Herling, Lumographics

Vom zentralen 3D Modell zum Multi-Channel-Marketing
Ralf Schimmele, RTT AG

13:30 – 14:30 Lunch Break und VEC ENDE

Tracking Techniken und Anwendungsgebiete

Interaktion: der Schlüssel zu VR – Technik, Anwendungen und Trends
Dr. Andreas Wierse, VISENSO GmbH

Low-Cost Tracking
Prof. Dr. Uwe Kloos, HS Reutlingen

Optical Tracking
Dr. Arjen van Rhijn, Personal Space Technologies

Einführung in Infrarot – Optische Trackingsysteme
Thomas Pintaric, Imagination Computer Services GmbH

TUESDAY, SEPTEMBER 28

- 9:00 – 12:00** Tutorial: Developing VR Applications with the inVRs Framework
Contact: Dr. Christoph Anthes (Johannes Kepler University Linz, Austria)
 Location: Room Kepler
- 13:00 – 17:00** Tutorial: Walking Experiences in Virtual Worlds
Contact Organizer: Dipl.-Inform. Gerd Bruder (WWU Münster, Germany)
 Location: Room Kepler

FRIDAY, OCTOBER 1

- 9:00 – 12:00** Workshop (with Panel):
 Virtual Avatars: Seeing ourselves in Virtual Reality
Contact: Dr. Betty Mohler (MPI Tübingen, Germany)
 Location: Room Heuss-Knapp
- 13:00 – 18:15** Lab Demo: The Cyberneum at MPI for Biological Cybernetics,
 Tübingen, Germany
Contact: Dr. Betty Mohler (MPI Tübingen, Germany)
 Location: MPI Tübingen
- 13:00** Bus starts in front of the Schwabenlandhalle
14:00 – 16:30 Lab Demo
 The bus will stop on the trip back at the airport and
 at the main station before returning to Schwabenlandhalle

TUESDAY, SEPTEMBER 28

- 9:30 – 10:15** Keynote talk from Pr. Paul Milgram
 Location: Room Daimler
- 10:15 – 12:30** potential SIG »Augmented Reality«
Contact: Didier.Stricker@dfki.de
 Location: Room Daimler
- potential SIG »Robotics«
Contact: Ryad.Chellali@iit.it
 Location: Room Diskussionsraum
- 14:00 – 17:00** SIG »Haptics«
Contact: jerome.perret@haption.com
- potential SIG »Web3D«
Contact: franco.tecchia@sssup.it
 Location: Room Diskussionsraum

FRIDAY, OCTOBER 1

- 9:30 – 12:00** SIGs »Human factors and Ergonomic Issues of VEs« & »Im
 proving Human skills and Knowledge« (joint meeting)
 Location: Room Diskussionsraum
- SIG »VR for Design, Engineering, and Manufacturing«
 Location: Uhlandsaal
- 12:15 – 13:30** Closure session
 Synthesis on the SIG sessions, and general discussion on SIGs
 Location: Uhlandsaal