

# **Proceedings Web3D 2012**

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## Preface

Welcome to Web3D 2012! These proceedings represent the seventeenth international ACM symposium on 3D Web technologies. Web3D is held in cooperation with ACM SIGGRAPH, Eurographics and the Web3D Consortium and takes place in Los Angeles, CA, USA, August 4<sup>th</sup>-5<sup>th</sup>, 2012.

Web3D is a major event which unites researchers, developers, entrepreneurs, experimenters, artists and content creators in a dynamic learning environment. Attendees share and explore methods of using, enhancing and creating new 3D Web and Multimedia technologies such as HTML5/ WebGL, Flash 11/ Stage 3D, X3D, MPEG, and Collada. The conference also focuses on recent trends in interactive 3D graphics, information integration and usability in the wide range of Web3D applications from mobile devices to high-end immersive environments.

This year, we had 50 high quality submissions among which we selected 24 short and long research papers, with a full paper acceptance rate of 28%, as well as 9 more poster papers. Each paper was double-blind reviewed by three to seven members of our international program committee. This selective process ensures a high quality set of paper sessions, which cover the most important Web3D topics, including modeling and rendering, scientific visualization, geospatial methods, mobile computing, Web3D standards, interaction techniques, and remote collaboration.

Beyond the technical paper program, a number of tutorials and workshops are also organized, providing a variety of insights about recent Web3D technologies to all attendees. In addition, we are deeply honored to have Markus Gross and David Kasik as keynote speakers and would like to thank them for accepting our invitation.

Finally, we would like to thank all people who have been involved in the preparation of this year's conference, most particularly the International Program Committee members, Stefanie Behnke, Stephen Spencer, and our sponsors, namely EDF, Kitware, Vicomtech and Wildpeaks.

Yvonne Jung and Marcio Cabral  
Program Chairs

Christophe Mouton and Jorge Posada  
General Chairs

## Keynote Speakers

### **Markus Gross**

Professor at ETH  
Director of Disney Research Zürich  
Zürich, Switzerland

Markus Gross is a Professor of Computer Science at the Swiss Federal Institute of Technology Zürich (ETH), head of the Computer Graphics Laboratory, and the Director of Disney Research, Zürich. He joined the ETH Computer Science faculty in 1994. His research interests include physically based modeling, computer animation, immersive displays, and video technology. Before joining Disney, Markus was director of the Institute of Computational Sciences at ETH.

He received a master of science in electrical and computer engineering and a PhD in computer graphics and image analysis, both from Saarland University in Germany in 1986 and 1989.

Markus serves on the boards of numerous international research institutes, societies, and governmental organizations. He also received the Technical Achievement Award from EUROGRAPHICS in 2010 and the Swiss ICT Champions Award in 2011. He is a fellow of the EUROGRAPHICS Association and a member of the German Academy of Sciences Leopoldina. Prior to his involvement in Disney Research he cofounded Cyfex AG, Novodex AG, LiberoVision AG, and Dybuster AG.

### **David J. Kasik**

Senior Technical Fellow, Boeing  
USA

Dave Kasik is Boeing's Senior Technical Fellow in visualization and interactive techniques. He is pursuing new ways of using visualization for huge amounts of both geometric and non-geometric data. His work with geometric data has made Dave a pioneer in interactive 3D computer graphics. He devoted his first 11 years at Boeing to research and development of computer-aided design software. These projects led to pioneering work in interactive 3D graphics, user interface management systems, and industrial use of non-uniform rational (NURBS) solids and surfaces.

Dave has worked to make 3D geometry available to the entire Boeing user community. Examples include:

- IVT/Superviewer lets users see an entire virtual Boeing aerospace product without using special hardware.
- Low-end visualization gives users access to 3D engineering drawings, parts lists, training material, etc. Much of this content is delivered via the Web.
- Thin client makes high performance computers available to remote users.

Dave is pioneering the use of visual analytics to help extract more information from complex non-geometric data. Visual analytics supplements more traditional analytic techniques (like statistics and data mining) with a human's ability to use vision to find anomalies and detect trends. Emerging visual analytics tools are being explored in areas as diverse as safety and marketing.

He earned his Masters in Computer Science from the University of Colorado in 1972 and a Bachelors in Quantitative Studies from the Johns Hopkins University in 1970. He participates in numerous professional organizations, including ACM (Association for Computing Machinery), which named Dave a Distinguished Scientist in 2007; ACM SIGGRAPH, where he runs the annual Pioneers student mentoring program; and IEEE, where he is a member of the IEEE Computer Graphics and Applications editorial board.