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## Keynote

### Collaborative Editing in the Cloud – First Steps and Challenges Ahead

*Prof. Dr. Fabio Pellacini*

#### **Abstract**

Today we take for granted the ability to freely and seamlessly collaborate with others on document editing, with applications such as Dropbox and Google Docs. The 3D industry though is still in its infancy in supporting this type of workflows.

In this talk, I will describe a few of our research prototypes that allow seamless collaboration for editing meshes and game levels. I will then discuss challenges that we face as a community in developing these types of systems.

#### **Short Biography**

Since the Winter of 2011 Fabio is an Associate Professor in Computer Science at Sapienza Università di Roma, where he runs the Computational Design Lab, a group dedicated to using Computer Graphics methods to solve content creation and design problems. Before then he was an Assistant Professor (2005-2009) and then an Associate Professor (2009-2011) in Computer Science at Dartmouth College, an Ivy League University. Before Dartmouth he was a Visiting Assistant Professor (2004-2005) in Computing and Information Science at Cornell University. Fabio also worked in the research division of Pixar Animation Studios (2002-2004) developing new algorithms used in various award winning feature films (Monster's Inc., Finding Nemo, The Incredibles, Cars). He received a Ph.D. in Computer Science from Cornell University in 2002, working at the Program of Computer Graphics, and a Laurea degree in Physics (equiv. to BS and MS) from the University of Parma, Italy. He received an NSF CAREER award in 2008, and an Alfred P. Sloan research fellowship in 2009.



## Keynote

### From Quad Meshes to Quad Layouts

*Prof. Dr. Leif Kobbelt*

#### **Abstract**

The conversion of raw geometric data (that typically comes in the form of unstructured triangle meshes) to high quality quad meshes is an important and challenging task. The complexity of the task results from the fact that quad mesh topologies are subject to global consistency requirements which cannot be dealt with by local constructions. This is why recent quad meshing techniques formulate the mesh generation process as a global optimization problem. By adding hard and soft constraints to this optimization, many desired properties such as structural simplicity, principal direction alignment, as well as injectivity can be guaranteed by construction. An even more challenging problem is the computation of quad layouts, where a coarse segmentation of the input surface into essentially rectangular patches is sought which also satisfies global consistency and shape quality requirements. While being structurally related, both problems need to be addressed by fundamentally different approaches. In my talk I will present some of these approaches and demonstrate that they can generate high quality quad meshes and quad layouts with a high degree of automation but that they also allow the user to interactively control the results by setting boundary conditions accordingly.

#### **Short Biography**

Leif Kobbelt is a full professor of Computer Science with a specialization in Computer Graphics and Geometry Processing. Since 2001 he is the head of the Institute for Computer Graphics and Multimedia at RWTH Aachen University.

After having received his diploma in 1992 and his PhD in 1994 in Computer Science from the Karlsruhe Institute of Technology (both with distinction) he worked at the University of Wisconsin in Madison, the University of Erlangen-Nuremberg and the Max Planck Institute of Computer Science before he moved to RWTH Aachen University in 2001. His major research interests include 3D reconstruction, efficient geometry processing, realistic real-time rendering and (mobile) multimedia applications. Kobbelt published a substantial number of influential papers in international top-conferences and journals. In addition, he acts as a consultant, reviewer, and editor for international companies, research organizations and journals respectively. For his research he was awarded with a number of renowned academic prizes including the Heinz-Maier-Leibnitz price in 2000, the Eurographics Outstanding Technical Contribution Award 2004, the Günther Enderle Award (in 1999 and 2012), an ERC Advanced Grant 2013 and the Gottfried Wilhelm Leibniz Prize in 2014. He has been named a Fellow of the Eurographics Association (2008) and a Distinguished Professor of RWTH Aachen University (2013). In 2015 he became a member of the Academia Europaea and in 2016 a member of the North Rhine Westphalian Academy of Sciences, Humanities and the Arts.