

# Distributed Parallel Rendering on a Cluster of GPUs



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Professor Renato Pajarola received his Dipl. Inf-Ing and Dr. sc. techn. degrees in computer science from the Swiss Federal Institute of Technology (ETH) Zurich in 1994 and 1998 respectively. Subsequently he was a post-doctoral researcher and lecturer in the Graphics, Visualization & Usability (GVU) Center at Georgia Tech. In 1999 he joined the University of California Irvine (UCI) as an Assistant Professor where he founded the Computer Graphics Lab. Since 2005 he has been leading the Visualization and MultiMedia Lab (VMML) at the University of Zurich (UZH) as an Associate Professor in the Department of Informatics. He is a member of ACM, ACM SIGGRAPH, IEEE Computer Society and Eurographics. Dr. Pajarola's research interests include real-time 3D graphics, multi-resolution modeling, point based graphics, interactive large-scale scientific visualization, remote and parallel rendering, compression and interactive 3D multimedia. He has published a wide range of internationally peer-reviewed research articles in top journals and conferences. Dr. Pajarola regularly serves on program committees, such as the IEEE Visualization Conference (2004-06, 09-10), Eurographics (2010), Pacific Graphics (2002-03, 07-08), IEEE Pacific Visualization (2008-10) and EuroVis (2001, 2006-10). He chaired the 2010 EG Symposium on Parallel Graphics and Visualization and was papers co-chair of the 2007 and 2008 IEEE/EG Symposium on Point-Based Computer Graphics. Furthermore, he received a Eurographics Best Paper Award (as co-author) in 2005, and an IADIS Best Paper Award in 2007.

## Abstract

Parallelization of the standard real-time 3D graphics rasterization pipeline has well been exploited within modern GPUs as many vertex and fragment shaders are employed to efficiently perform transformation, lighting, shading and rasterization in parallel. To support interactive visualization of very large data sets, however, it is desirable to exploit scalable cluster-parallel rendering systems which pose quite different challenges. In my talk, I will analyze the aspects of distributed parallel rendering on a cluster of GPUs, identify the main challenges and discuss approaches and existing solutions such as our parallel rendering framework Equalizer.



## Welcome to the Talk!

**Time:** 1:30pm, June 18, 2010

**Site:** 2<sup>nd</sup> meeting room, Administration Building, Zhangjiang Campus, Fudan University

**Host:** Research Center for Dataology and Datascience, School of Computer Science, Fudan University