

Proceedings of the  
18th Central European Seminar  
on Computer Graphics

May 25 - 27, 2014  
Smolenice, Slovakia  
Co-organized with SCCG

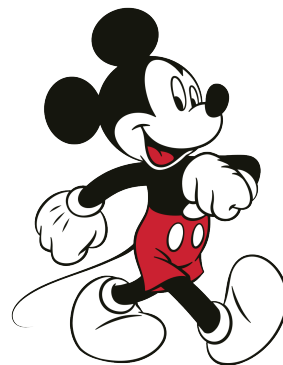


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Vienna University of Technology  
Institute of Computer Graphics and Algorithms  
Favoritenstraße 9-11/186  
1040 Vienna

ISBN 978-3-9502533-6-8

## Welcome to CESC G 2014!

This book contains the proceedings of the 18th Central European Seminar on Computer Graphics, short CESC G, which continues a history of very successful seminars. Again this year, CESC G proceedings have an ISBN (978-3-9502533-6-8) and will therefore remain retrievable as long as there are libraries!

The long history of CESC G has started in 1997 in a medium-sized lecture room in Bratislava, bringing together students from Bratislava, Brno, Budapest, Graz, Prague, and Vienna. The idea found wide appraisal and the seminar moved to the beautiful castle of Budmerice, where it was held for 8 consecutive years, constantly growing in size and attraction. It was just in the 10th anniversary year 2006 that CESC G had to take a detour to move to Častá-Papiernička Centre, while it was back in Budmerice castle since 2007. Unfortunately, since 2011 the Budmerice castle is not available for scientific activities. After spending the one year in Viničné, in 2012 we moved to the beautiful castle in Smolenice.

Who are the CESC G heroes who made this year's seminar happen? In no particular order – because many people were involved equally – we would like to thank the organizers from Vienna: **Michael Wimmer**, Anita Mayerhofer, Werner Purghofer, Katharina Krösl and Bernhard Steiner. Special thanks goes to **Martin Ilčík** for taking care of the complete reviewing process and scientific program preparation. We are very thankful to the CESC G organizers from Bratislava, mainly **Andrej Ferko**, always an inspiration to CESC G; and Ela Šikudová, Janka Běhal Dadová, David Běhal and Ivka Varhaníková for the excellent preparations and on-site organization.

The main idea of CESC G is to bring students of computer graphics together across boundaries of universities and countries. Therefore we are proud to state that we have achieved again a very high number of 11 participating institutions and a very tight time schedule of 20 valuable student works and two invited talks. We welcome groups from Bratislava (UK and STU), Slovakia; Brno (VUT and MU) and Prague (CTU), Czech Republic; Budapest, Hungary; Graz and Vienna (TU), Austria; Szczecin, Poland; and Maribor, Slovenia.

We assembled a large International Program Committee of 16 members, allowing us to have each paper reviewed by three IPC members during the informal reviewing process. We would like to thank the members of the IPC for their contribution to the reviewing process. The IPC of CESC G 2014 consists of:

Jiří Bittner  
Silvester Czanner  
Andrej Ferko  
Jasminka Hasić  
Ivana Kolingerová  
Radosław Mantiuk  
Selma Rizvić  
Michael Schwärzler

Jiří Sochor  
Markus Steinberger  
Marc Streit  
László Szirmay-Kalos  
Ania Tomaszewska  
Michael Wimmer  
Borut Žalik  
Pavel Zemčík

The first invited talk “The Role of Perception in Graphics” will be held by Rafał Mantiuk from Research Institute of Visual Computing of the School of Computer Science of Bangor University, United Kingdom. The second invited talk by Roberto Scopigno from Visual Computing Lab of the Institute of Information Science and Technology of National Research Council of Italy, will be about “Visual Media for Cultural Heritage: An Opportunity for Assessing, Finding Limitations and Enhancing Technologies”.

The seminar is co-organized with the Spring Conference on Computer Graphics (SCCG), which takes place right after the seminar.

The organization of a seminar where there are only low expenses for the students requires funding. We are very thankful to the sponsors of CESC G 2014:

- NVidia, The Way It’s Meant to Be Played,
- VRVis Research Center,
- OCG, The Austrian Computer Association,
- SISp, Slovak Society for Computer Science,
- Eurographics, The European Association for Computer Graphics.

The best paper will be awarded by an NVidia Shield console for development of next-generation Android games and wirelessly streamed PC games.

Please note that the electronic version of these proceedings is also available at <http://www.cescg.org/CESCG-2014/>.

April 2014,

Michael Wimmer  
Jiří Hladůvka  
Martin Ilčík

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# Invited Talks

# Visual Media for Cultural Heritage: An Opportunity for Assessing, Finding Limitations and Enhancing Technologies

Roberto Scopigno

National Research Council of Italy

## Abstract

Digital technologies are now mature for producing high quality digital replicas of Cultural Heritage (CH) artifacts. The research results produced in the last two decades have shown an impressive evolution and consolidation of the technologies for acquiring high-quality digital 3D models, encompassing both geometry and color (or, better, surface reflectance properties); technologies for the interactive visualisation of complex models and the integration of different media have been also an important subject of research.

In this talk, I will present the more recent progresses, focusing on practical solutions which aim at a major impact in real applications. The talk will also try to give a glance into the near future, demonstrating how geometry processing and visualization could become a major instrument in the study and dissemination of our cultural heritage.

## Bibliographical Details

Roberto Scopigno is a Research Director at ISTI, an Institute of the Italian National Research Council (CNR) located in Pisa, and leads the Visual Computer Lab. He graduated in Computer Science at the University of Pisa in 1984, and has been involved in Computer Graphics since then.

He is currently engaged in several EU and national research projects concerned with multiresolution data modeling and rendering, 3D digitization/scanning, scientific visualization, geometry processing, virtual reality and applications to Cultural Heritage.

He published more than two hundreds papers in international refereed journals/conferences with Google Scholar h-index 39 and more than 7100 citations. He presented invited lectures or courses at several international conferences. He was Co-Chair of several international conferences and served in the program committees of international events.

Since 2012 he is Editor In Chief of the ACM Journal of Computing and Cultural Heritage; he served as Editor in Chief of the journal "Computer Graphics Forum" (2001-2010). He is member of Eurographics, served as elected member of the Eurographics Executive Committee since 2001 and was the Eurographics Chairman on 2009-2010. He is recipient of several awards, including the EG Distinguished Career Award (2014), the EG Outstanding Technical Contribution Award (2008) and the Tartessos Virtual Archeology Award (2011).