

Eurographics Symposium on Rendering 2015

Experimental Ideas & Implementations

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Program Co-Chairs

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Aalto University and NVIDIA Research, Finland

Derek Nowrouzezahrai

Université de Montréal, Canada

Conference Chair

Michael Goesele

GCC - Graphics, Capture and Massively Parallel Computing, TU Darmstadt, Germany

Proceedings Production Editor

Dieter Fellner (TU Darmstadt & Fraunhofer IGD, Germany)

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Table of Contents

Table of Contents	iii
A Word From the Paper Chairs	v
Sponsors	vii
International Programme Committee	viii
Reviewers	ix
Author Index	x
Invited Talk and Keynote	xi

Shadows

Practical Shading of Height Fields and Meshes using Spherical Harmonic Exponentiation	1
<i>Aude Giraud and Derek Nowrouzezahrai</i>	

Material Appearance

Practical Rendering of Thin Layered Materials with Extended Microfacet Normal Distributions	9
<i>Jie Guo, Jinghui Qian, and Jingui Pan</i>	
MatCap Decomposition for Dynamic Appearance Manipulation	21
<i>Carlos Jorge Zubiaga, Adolfo Muñoz, Laurent Belcour, Carles Bosch, and Pascal Barla</i>	

Ray Tracing

Efficient Visibility Heuristics for kd-trees Using the RTSAH	31
<i>Matthias Moulin, Niels Billen, and Philip Dutré</i>	
GPU-based Out-of-Core HLBVH Construction	41
<i>Mahmoud Zeidan, Taymoor Nazmy, and Mostafa Aref</i>	
Apex Point Map for Constant-Time Bounding Plane Approximation	51
<i>Samuli Laine and Tero Karras</i>	
MBVH Child Node Sorting for Fast Occlusion Test	57
<i>Shinji Ogaki and Alexandre Derouet-Jourdan</i>	

Light Paths

Gradient-Domain Bidirectional Path Tracing	65
<i>Marco Manzi, Markus Kettunen, Miika Aittala, Jaakko Lehtinen, Frédo Durand, and Matthias Zwicker</i>	

Table of Contents

Exposure and Video

Color Clipping and Over-exposure Correction	75
<i>Mekides Assefa Abebe, Tania Pouli, Jonathan Kervec, and Chaker Larabi</i>	

Real-time Rendering and Filtering

Interactive Global Illumination Effects Using Deterministically Directed Layered Depth Maps	87
<i>Frederik Peter Aalund, Jeppe Revall Frisvad, and Jakob Andreas Bærentzen</i>	

High Performance Non-linear Motion Blur	99
<i>Jean-Philippe Guertin and Derek Nowrouzezahrai</i>	

Filtering Environment Illumination for Interactive Physically-Based Rendering in Mixed Reality ..	107
<i>Soham Uday Mehta, Kihwan Kim, Dawid Pajak, Kari Pulli, Jan Kautz, and Ravi Ramamoorthi</i>	

Perception and Simplification

Stereo from Shading	119
<i>Alexandre Chapiro, Carol O'Sullivan, Wojciech Jarosz, Markus Gross, and Aljoscha Smolic</i>	

A Word From the Papers Chairs

Welcome to the proceedings of the Eurographics Symposium on Rendering 2015. This marks the 26th annual event in the history of the conference that become the premier place for disseminating and discussing current and future rendering research challenges. The conference is hosted at the Fraunhofer IGD and TU Darmstadt in Darmstadt, Germany from June 24 to 26.

While the traditional EGSR papers track has remained as-is, with all its papers appearing in an issue of Computer Graphics Forum, the papers program as a whole has undergone a change this year: the introduction of a second papers track, focussing on experimental ideas & implementation details, that aims to get exciting new ideas out into the open as fast as possible with less concern for their immediate utility or thoroughness of validation. Our main motivation for the (itself experimental!) new track was the feeling, expressed by many in the rendering research community, that the “campfire” feeling of rendering symposia and workshops of the past may have waned as the (justified) demands of journal publication have made it harder to present ideas that have not yet been scrupulously verified. By introducing the second papers track, we hope to bring some of that campfire feeling back to EGSR, while holding on to its strengths, including diversity of content. We will shortly know if we succeeded or not!

This year marks the first increase in the submission rate to EGSR in several years. We received a total of 66 full submissions, including 53 submissions to the CGF papers track and another 13 submissions to the new Experimental Ideas & Implementations (EI&I) track. Of these submissions, 16 papers were accepted for publication in the CGF track, 7 CGF track papers were referred for publication in the EI&I track, and 6 other EI&I submissions were also accepted. Additionally, one CGF track submission was fast tracked for revision at Computer Graphics Forum. Finally, nine Computer Graphics Forum articles will be presented inline with the EGSR papers at this year’s conference. This brings the total number of paper presentations to 38, which is a significant increase from the past few years.

We look forward to discussing the strengths and weaknesses of the new papers program with the entire community, starting in the Townhall meeting held on June 25 at the conference. Regardless, we would like to extend our gratitude to the entire community, including the Eurographics organization, for being open and enthusiastic in embracing this experiment.

Without the authors who prepared and submitted their work, the many reviewers who took time out of the schedules to evaluate these submissions, and the coordination and reviewing work put in by all our esteemed colleagues who graciously accepted to serve on the International Program Committee, EGSR would not happen. Thank you!

To make the event even more enticing, we have the pleasure of hosting two exciting and complementary invited speakers. Luca Fascione, Head of Rendering Research at Weta Digital, will give a keynote address on the challenges of physically-based production rendering on massive scales; Steve Hill, 3D Technical Lead at Ubisoft Montreal, will give an invited talk on the real-time rendering techniques employed at Ubisoft. We sincerely thank them for accepting our invitations.

We express our gratitude to the local organizers, led by Michael Goesele at the TU Darmstadt. By the looks of the preparations, EGSR 2015 will continue the trend and be an inspiring and fun event on many levels. Stefanie Behnke of TU Graz, once again, served as an irreplaceable contributor to EGSR through

her continuous efforts on maintaining the submission and review system, producing the proceedings, and smoothing out the inevitable bumps along the way.

Lastly, we would like to humbly thank the steering committee of the Eurographics Working Group on Rendering for inviting us to serve as Papers Co-Chairs for this year's conference. It has truly been an honor, and we hope to have done our part in upholding the high standards of the Symposium. We look forward to working with future chairs to maintain the tradition of EGSR as the premier venue for rendering-related work.

Jaakko Lehtinen, Aalto University and NVIDIA Research, Finland
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Fatahalian, Kayvon	Novak, Jan	Wang, Oliver
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Hachisuka, Toshiya	Paulin, Mathias	Zhao, Shuang
Heitz, Eric	Peers, Pieter	Zimmer, Henning
Jarabo, Adrián	Popov, Stefan	

Author Index

Aalund, Frederik Peter	87	Kim, Kihwan	107
Abebe, Mekides Assefa	75	Laine, Samuli	51
Aittala, Miika	65	Larabi, Chaker	75
Aref, Mostafa	41	Lehtinen, Jaakko	65
Bærentzen, Jakob Andreas	87	Manzi, Marco	65
Barla, Pascal	21	Mehta, Soham Uday	107
Belcour, Laurent	21	Moulin, Matthias	31
Billen, Niels	31	Muñoz, Adolfo	21
Bosch, Carles	21	Nazmy, Taymoor	41
Chapiro, Alexandre	119	Nowrouzezahrai, Derek	1, 99
Derouet-Jourdan, Alexandre	57	Ogaki, Shinji	57
Durand, Frédo	65	O'Sullivan, Carol	119
Dutré, Philip	31	Pajak, Dawid	107
Frisvad, Jeppe Revall	87	Pan, Jingui	9
Giraud, Aude	1	Pouli, Tania	75
Gross, Markus	119	Pulli, Kari	107
Guertin, Jean-Philippe	99	Qian, Jinghui	9
Guo, Jie	9	Ramamoorthi, Ravi	107
Jarosz, Wojciech	119	Smolic, Aljoscha	119
Karras, Tero	51	Zeidan, Mahmoud	41
Kautz, Jan	107	Zubiaga, Carlos Jorge	21
Kerverec, Jonathan	75	Zwicker, Matthias	65
Kettunen, Markus	65		

Invited Talk

Game Rendering: Past, Present...and Future?



Stephen Hill
3D Technical Lead at Ubisoft
Montreal

Abstract

This presentation will describe my personal (in)experiences over 10+ years of working on rendering in the videogame industry, current trends, and some wild predictions about the future. The bulk of the talk will cover a selection of R&D challenges and eventual solutions from the games I've worked on - Splinter Cell: Chaos Theory, Conviction, and Assassin's Creed: Unity - as well as techniques that didn't work in practice due to production constraints.

Throughout the presentation, I will cite academic research that has influenced my thinking - as well as the industry at large - and how it has been applied in practice. I also hope to relate, through the various examples, the exciting and unique "problem space" that videogames provide.

Short Biography

Stephen Hill is a 3D Technical Lead at Ubisoft Montreal, now specialising in physically based graphics R&D at the studio. Previously, he was heavily involved in the creation of a new physically based rendering system and pipeline for Assassin's Creed Unity over the course of its three-year development. He was also the 3D tech lead on Splinter Cell Conviction, during which he developed novel systems for dynamic ambient occlusion and visibility.

Keynote

Rendering Research at Weta Digital



Luca Fascione
Head of Rendering Research
at Weta Digital

Abstract

The company culture at Weta Digital calls for artists to push scene complexity and image quality to their limits with each new production. It's the job of the rendering research team to make sure the rendering resources and technology enable, support and often invite this passionate pursuit of perfection. I will cover the inspiration, advancements and occasional missteps over the last decade that led to the creation of Weta's new path-tracing production renderer Manuka. I'll also give some insight into some of the open challenges that are currently being pursued as well as a few future ones.

Short Biography

Luca Fascione is Head of Rendering Research at Weta Digital, where he leads the activity of research around rendering algorithms and material modeling. He joined Weta in 2004 and has also worked for Pixar Animation Studios. The rendering group's software, including PantaRay and Manuka, has been supporting the realization of large scale productions such as Avatar, The Adventures of Tintin, the Planet of the Apes films and the Hobbit trilogy.