

Eurographics Symposium on Rendering 2017

Experimental Ideas & Implementations

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Preface

Welcome to the 2017 Proceedings of the Eurographics Symposium on Rendering! This is the 28th edition of the conference, which is a premier venue for research in rendering and related areas. This year's conference is held in Helsinki, Finland on 19-21 June 2017, and co-located with the Workshop on Material Appearance Modeling. We look forward to welcoming researchers eager to meet and discuss the various areas and applications of rendering.

As in earlier years, EGSR 2017 offers two submission tracks. The traditional "CGF track", with papers that are reviewed for publication in Computer Graphics Forum, is accompanied by an "Experimental Ideas and Implementation" (EI&I) track. The latter targets submissions with fresh ideas, algorithmic details, or best-practice solutions that might still require further validation, but that would be inspiring for the community.

We received a total of 74 abstract submissions (53 in the CGF track and 21 in the EI&I track). After some withdrawals in the CGF track, we had a total of 41 full CGF paper submissions for review. The IPC accepted 16 full CGF papers and 12 EI&I papers for a total of 28 papers (two more than in 2016). In addition, we offered invitations to three CGF papers to be presented in our program. Thus, we will have a total of 31 presentations in an exciting and packed 2.5-day event.

In addition to the paper talks, our program includes two great keynote talks given by Prof. Ren Ng from UC Berkeley and Prof. Kun Zhou from Zhejiang University. We are very excited to hear about their latest work and thank them for accepting our invitation to present at EGSR.

We would like to thank both the authors for the high quality of the submitted papers as well as the IPC members for their great effort during this very tight multi-stage review process. We have kept the review process the same as in the previous years, with three IPC reviewers per paper submission. Some of the papers rejected to CGF track were given the opportunity to present in the EI&I track.

We further thank Stefanie Behnke for her tremendous help in producing the EGSR proceedings, and for very quickly addressing a variety of unexpected issues that came up at different times throughout. We are very grateful to be able to count on her during the entire process.

Additionally, we would like to thank Min Chen, Editor in Chief of CGF, for helping us cover all aspects of the journal publication process and for giving support for inviting the additional CGF papers to the conference.

We would like to express our gratitude to our local organizers Jaakko Lehtinen, Samuli Laine, and Timo Aila for the tremendous work required to put the event together. We are looking forward to a great three days in Helsinki. Thanks guys!

Finally, we thank the steering committee of the Eurographics Working Group on Rendering for inviting us as paper's chairs. We hope to be able to complete this cycle in Helsinki having contributed to maintaining the high quality level of research output of our rendering family.

Let us all (sur)render ourselves to three exciting days in Helsinki!

Matthias Zwicker, University of Maryland, College Park, USA

Pedro Sander, HKUST, Hong Kong

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Keynote

Optimizing Light Field Camera Designs

Ren Ng

Abstract

Computational photography is pushing sophisticated computational thinking deeper into the imaging pipeline. For example, light field cameras record higher-dimensional data than conventional cameras, and enable new functionality, like depth inference, refocusing and correcting lens aberrations in post-processing. This talk will review the theory and intuition of light field camera design, and describe the resulting transformation of design considerations and opportunities in core subsystems: optics, sensors and processors. The development of such cameras opens the door to the use of light field cameras for computer vision and machine learning.

Short Biography

Ren Ng is a faculty member in Electrical Engineering and Computer Science at the University of California, Berkeley. His research interests are in imaging, graphics and applied mathematics, focusing on the theory and engineering of computational imaging systems. In 2006, Ren founded Lytro, Inc., which commercialized his Ph.D. research and brought consumer light field cameras to market. Ren completed his Ph.D. in computer science at Stanford University. Awards include the ACM Doctoral Dissertation Award, Sloan Research Fellowship, Selwyn Medal from the Royal Photographic Society, MIT Tech Review's TR35 and Entrepreneur of the Year, Fast Company's 100 Most Creative People in Business, and Silicon Valley Journal's 40 under 40.

Keynote

Digital Avatars for All: Interactive Face and Hair

Kun Zhou

Abstract

Although realistic face/hair modeling and animation technologies have been widely employed in computer generated movies, it remains challenging to deploy them in consumer-level applications such as computer games, social networks and other interactive applications. The main difficulties come from the requirement of special equipment, sensitivity to daily environments, laborious manual work and high computational costs. In this talk, I will introduce our recent research on realistic face/hair modeling and animation, aiming at interactive applications and ordinary users. In particular, I will describe fully automatic approaches to real-time facial tracking and animation with a single web camera, methods for modeling hairs from images, and real-time algorithms for realistic hair simulation.

Short Biography

Kun Zhou is a Cheung Kong Professor and the Director of the State Key Lab of CAD&CG at Zhejiang University. Earlier, he was a Lead Researcher of the Internet Graphics Group at Microsoft Research Asia. He received his BS and PhD degrees from Zhejiang University in 1997 and 2002, respectively. His research interests include geometry processing, photorealistic rendering, computer animation and GPU parallel computing. He is/was an associate editor of IEEE TVCG and ACM TOG, and serves on the editorial advisory board of IEEE Spectrum. He is a Fellow of IEEE.