

The European Association for Computer Graphics  
38<sup>th</sup> Annual Conference

## EUROGRAPHICS 2017

Lyon, France  
April 24th – 28th, 2017

---

Organized by



EUROGRAPHICS  
THE EUROPEAN ASSOCIATION  
FOR COMPUTER GRAPHICS



---

## State of the Art Reports

### STARs Co-Chairs

Victor Ostromoukov, University of Lyon 1, France  
Matthias Zwicker, University of Bern, Switzerland

Published by  
*The Eurographics Association and John Wiley & Sons Ltd.*  
in *Computer Graphics forum*, Volume 36 (2017), Number 2  
ISSN 1467-8659

## **Preface**

The Eurographics State of the Art Reports (STARs) provide an up-to-date and comprehensive overview of special topics of current interest related to Computer Graphics. As an alternative, they may also address the use of Computer Graphics techniques in a different scientific discipline or in industrial practice.

This year, we received 13 complete STAR submissions, covering a range of topics in fabrication, mesh processing, modelling, rendering, and visual analytics. Each submission was reviewed by at least three members of the international program committee in a single-blind, double-cycle reviewing process. Based on the recommendations of the reviewers, five submissions were accepted as Eurographics 2017 STARs and are published in this special issue of Computer Graphics Forum. In addition, three submissions were referred to the fast submission track of Computer Graphics Forum, pending a major revision.

We thank all authors and the international program committee members for their great effort and contributions. We further thank the conference chairs, Eric Galin and Raphaëlle Chaîne, as well as the local organizers, for their advice and help and for their hard work in organizing the Eurographics 2017 conference. Special thanks go to Stefanie Behnke, who was in charge of producing this special issue. We are very grateful for her assistance during the submission and reviewing stages, and her help with managing the submission system. We are also grateful to Adrien Peytavie for his precious help and efficient web site maintenance.

March 2017  
Victor Ostromoukhov and Matthias Zwicker  
EG 2017 STARs Chairs

## **International Programme Committee**

Akenine-Möller, Tomas  
Alliez, Pierre  
Azuma, Ronald  
Barron, Jon  
Bittner, Jirí  
Bouatouch, Kadi  
Bousseau, Adrien  
Bowman, Doug  
Brunet, Pere  
Cattin, Philippe  
Chen, Jiawen  
Chrysanthou, Yiorgos  
Cohen-Or, Daniel  
Coros, Stelian  
Dachsbacher, Carsten  
Deussen, Oliver  
Didyk, Piotr  
Digne, Julie  
Drettakis, George  
Eagleson, Roy  
Fatahalian, Kayvon  
Ferwerda, James  
Foley, Tim  
Froehlich, Bernd  
Garces, Elena  
Geraedts, Jo  
Ghosh, Abhijeet  
Goesele, Michael  
Gutierrez, Diego  
Hachet, Martin  
Hart, John  
Havran, Vlastimil  
Heidrich, Wolfgang  
Herberg, Jonathan  
Hirose, Michitaka  
Igarashi, Takeo

Kaplan, Craig  
Kazhdan, Misha  
Kiyokawa, Kiyoshi  
Krivánek, Jaroslav  
Laine, Samuli  
Lehtinen, Jaakko  
Levy, Bruno  
Li, Bo  
Lischinski, Dani  
Liu, Ligang  
Mitra, Niloy  
Nealen, Andrew  
Nowrouzezahrai, Derek  
Otaduy, Miguel A.  
Pauly, Mark  
Reinhard, Erik  
Reyes, Mauricio  
Shamir, Ariel  
Sharf, Andrei  
Sheffer, Alla  
Smolic, Aljosa  
Stürzlinger, Wolfgang  
Tal, Ayellet  
Theobalt, Christian  
Theoharis, Theoharis  
van Kaick, Oliver  
van Krevelen, Rick  
Varshney, Amitabh  
Vázquez, Pere-Pau  
Velho, Luiz  
Wand, Michael  
Whiting, Emily  
Wilkie, Alexander  
Wonka, Peter  
Yang, Yongliang  
Zollhöfer, Michael

## Author Index

Attene Marco .....	537	Funkhouser Thomas .....	509	Martínez Jonàs .....	537
Bala Kavita .....	593	Grogorick Steve .....	611	Myszkowski Karol .....	611
Bermano AmitHaim .....	509	Hinkenjann André .....	611	Paris Sylvain .....	593
Bonneel Nicolas .....	593	Kovacs Balazs .....	593	Roth Thorsten .....	611
Didyk Piotr .....	611	Kruijff Ernst .....	611	Rusinkiewicz Szymon .....	509
Eilertsen Gabriel .....	565	Lefebvre Sylvain .....	537	Slusallek Philipp .....	611
Eisemann Elmar .....	611	Livesu Marco .....	537	Stengel Michael .....	611
Eisemann Martin .....	611	Magnor Marcus .....	611	Unger Jonas .....	565
Ellero Stefano .....	537	Mantiuk Rafal K. ....	565	Weier Martin .....	611

## TABLE OF CONTENTS

### State of the Art Reports

<i>State of the Art in Methods and Representations for Fabrication-Aware Design</i> Amit Haim Bermano, Thomas Funkhouser, and Szymon Rusinkiewicz	509
<i>From 3D Models to 3D Prints: An Overview of the Processing Pipeline</i> Marco Livesu, Stefano Ellero, Jonàs Martínez, Sylvain Lefebvre, and Marco Attene	537
<i>A Comparative Review of Tone-mapping Algorithms for High Dynamic Range Video</i> Gabriel Eilertsen, Rafal K. Mantiuk, and Jonas Unger	565
<i>Intrinsic Decompositions for Image Editing</i> Nicolas Bonneel, Balazs Kovacs, Sylvain Paris, and Kavita Bala	593
<i>Perception-driven Accelerated Rendering</i> Martin Weier, Michael Stengel, Thorsten Roth, Piotr Didyk, Elmar Eisemann, Martin Eisemann, Steve Grogorick, André Hinkenjann, Ernst Kruijff, Marcus Magnor, Karol Myszkowski, and Philipp Slusallek	611