EGPGV 2016

16th Eurographics Symposium on Parallel Graphics and Visualization

Groningen, The Netherlands
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Preface

This book contains the proceedings of the 16th Eurographics Symposium on Parallel Graphics and Visualization (EGPGV), which took place in Groningen, The Netherlands, on the 6th and 7th of June, 2016.

In this day and age, high-performance graphics and visualization solutions are required in a variety of domains, that range from making sense of the huge amounts of data coming out of simulations and sensing devices, to delivering real-time immersive experiences that simulate virtual worlds. Such systems are implemented on hardware platforms that are rapidly increasing in complexity, in terms of increasing concurrency, heterogeneity, and depth of memory and storage hierarchies. These factors present unique challenges, to which our community responds with novel methods and approaches for parallel and high-performance graphics and visualization. The EGPGV symposium aims to foster the exchange of experiences and knowledge exploiting and defining new trends in this important computer science area.

The papers program presents contributions that introduce novel parallel systems and techniques. This year, we received a total of 17 high-quality submissions, each of which underwent extensive review by a diverse International Program committee, consisting of 22 persons from around the world having broad and deep expertise in parallel graphics and visualization. Each contribution was independently reviewed by at least three IPC members, selected by the chairs according to their preferences, expertise, and conflicts. The members were assigned as either primary or secondary reviewers. After all the reviews were completed, the primary reviewer of each contribution led an online discussion among all co-reviewers and was responsible for writing a summary review and recommendation. This active discussion clarified issues with the papers and helped develop consensus about decisions. Based on the reviewers' recommendations, the individual reviews, the online discussions, and after a thorough deliberation by the program co-chairs, 9 or the 17 submissions were selected for inclusion in the program, resulting in acceptance rate of 53%.

This year's papers program covers a variety of subjects, including the efficient processing and generation of geometric data in GPU environments, the efficient management of large datasets in distributed settings, and the optimization of parallel graphics applications through the creation of efficient workflows. In addition to these papers, a visualization showcase presentation investigates the value of parallel 3D visualization to data mining techniques for identifying interesting features in large simulations of physical phenomena.

This year's keynote, by Marc Stamminger (University of Erlangen-Nuremberg, Germany), focuses on the subject of capturing 3D-models from real environments in real time by combining simple 3D-sensors with tailored parallel algorithms designed for modern GPUs.

We would like to thank Stefanie Behnke (Eurographics) and Meghan Haley (IEEE) for their help with handling the publications and invaluable assistance with the reviewing system, respectively. We would also like to thank Markus Huber (Univ. of Stuttgart, Germany) for his assistance with the EGPGV website. Finally, we would like to thank all the members of the IPC, the external reviewers, our sponsors, the authors, and the keynote speaker without whom this symposium would not have been possible.

Alex, Enrico, and Wes
Groningen, The Netherlands, June 2016

Keynote

Is it real? Capturing and Modifying Reality

Marc Stamminger
Computer Graphics Group, University of Nuremberg-Erlangen, Germany

Abstract
With the help of simple 3D-sensors, modern GPUs and tailored algorithms it is nowadays possible to capture 3D-models from real environments in realtime. With such a realtime 3D-model at hand, we can modify what we perceive as reality as a next step. In this talk we present work on capturing static and dynamic 3D scenes, on facial video manipulation and on dynamic projection mapping. The shown work comes from collaborations of the University of Erlangen-Nuremberg, MPI Informatics, and Stanford University.

Short Biography
Marc Stamminger is a professor for Visual Computing at the University of Erlangen-Nuremberg, Germany. His research covers various areas of Visual Computing, such as rendering, 3D capturing, mixed reality, or medical visualization, with a focus on GPU-based interactive applications. He published a number of papers on these topics. Marc is spokesman of the research training group Heterogeneous Image Systems with 25 PhD students.

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