

# **EG 3DOR 2015**

## **Eurographics 2015 Workshop on 3D Object Retrieval**

**Zurich, Switzerland  
May 2-3, 2015**

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## Preface

Seven years from its inception, the 3DOR workshop was organized for 2015 with the objective of providing a broader forum of discussion for researchers working in this area. As a result of this effort, 3DOR was extended to a 2-day event in order to include a comprehensive program consisting of research paper presentations, poster presentations, 2 keynote speeches, relevant EU project presentations and networking as well as a round table discussion with industrial partners.

In response to the call-for-papers, 19 research papers were submitted and reviewed by members of the IPC. Most papers received at least 3 reviews, based on which, 10 papers were selected for oral presentation at the workshop and 5 were accepted as posters. The papers comprise innovative results in many aspects of 3D Object Retrieval, including partial 3DOR, cross-modality 3DOR and facial analysis for 3DOR.

3DOR 2015 also hosts the 10th Shape Retrieval Contest (SHREC'15). The goal of the contest is to evaluate the effectiveness of 3D shape retrieval algorithms and to create public evaluation benchmarks, thus playing an important role in the evolution of practical 3D Object Retrieval research. SHREC'15 contributes to the proceedings with an impressive 7 track-report papers (out of 9 submissions) that detail the results of the contests. All track-report papers have been reviewed by the program chairs for quality and contribution.

As usual, it is planned to create a special issue in a respectable journal with extended versions of selected orally presented papers from the workshop.

We would specifically like to thank the members of the IPC for their valuable time which helped to ensure a high quality program. We are grateful to the Eurographics Association for their continued support for this event, to the University of Zurich for hosting us and, last but not least, to Stefanie Behnke!

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Theoharis Theoharis, NTNU, Norway

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## Keynote

### **XML3D: Declarative and Semantic 3D Scenes Descriptions as Part of HTML5 and Within a Web-based Service Infrastructure**

**Philipp Slusallek**

#### **Abstract**

The Web has become the dominating rich-media application platform offering a declarative description of dynamic and interactive arrangements of formatted texts, images, and videos – but so far no interactive 3D graphics. With XML3D we set out to identify the minimum set of extensions to HTML5 to declaratively add interactive 3D. By XML3D includes the core XML3D scene description; semantic 3D scene annotations via RDFa; flexible 3D asset storage, retrieval, and delivery via the BLAST streaming format; Xflow for declaratively describing flexible animation, image, and AR processing; shade.js for portable material descriptions, generating optimized output for forward and deferred glsl as well as ray tracing rendering; real-time synchronization between 3D scenes for shared experiences; and several other features. XML3D has been adopted as an enabler/standard within the EU Future Internet program and a number of commercial and non-commercial services have been built on top of XML3D by now. In this talk, I will briefly describe the need for and the challenges of designing a rich, declarative 3D scene description within the context of HTML5 and the Web while focusing on how XML3D can be used in the context of 3D object retrieval and related contexts.

#### **Short Biography**

Philipp Slusallek is Scientific Director at the German Research Center for Artificial Intelligence (DFKI), where he heads the research area “Agents and Simulated Reality” since 2008. He is also Director for Research at the “Intel Visual Computing Institute”, a central research institute at Saarland University founded in 2009 in collaboration with Intel, DFKI, and the two local Max-Planck-Institutes. At Saarland University he has been a professor for Computer Graphics since 1999 and a Principle Investigator at the German Excellence-Cluster on “Multi-modal Computing and Interaction” since 2007. Before coming to Saarland University, he was a Visiting Assistant Professor at Stanford University, USA. He studied physics in Frankfurt and Tübingen (Diploma/M.Sc.) and got his PhD in Computer Science from Erlangen University. His research interests are focused on novel service-oriented architectures for 3D-Internet technology, integrating research in areas such as real-time realistic graphics, artificial intelligence, high-performance computing as well as security by design for creating distributed, immersive, collaborative environments for simulation, analysis, visualization, and training.

## Keynote

### Linking Image and Shape Collections

**Niloy J. Mitra**

#### Abstract

As large public repositories of 3D shapes continue to grow, the amount of shape variability in such collections also increases, both in terms of the number of different classes of shapes, as well as the geometric variability of shapes within each class. While this gives users more choice for shape selection, it can be difficult to explore large collections and understand the range of variations amongst the shapes. In this talk I will discuss the latest efforts in group towards linking such collections with existing image collections. This not only better organizes input image and shape collections, but establishes tight links across them even under large shape and pose variations by exploiting the power embedded in collections. For further details, please visit: <http://geometry.cs.ucl.ac.uk/>

#### Short Biography

Niloy J. Mitra leads the Smart Geometry Processing group at the Department of Computer Science at University College London (UCL). He received his PhD degree and Masters in Electrical Engineering from Stanford University. His research interests include shape understanding, fabrication-aware design, geometric modeling, and more generally in computer graphics. He received the ACM Siggraph Significant New Researcher Award in 2013 and the BCS Roger Needham Award in 2015.