EuroVis 2014
Eurographics Conference on Visualization 2014

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June 9 – 13, 2014

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Preface

EuroVis 2014, hosted by Swansea University in historic Wales, UK, is the 16th annual visualization gathering organized by the Eurographics Working Group on Data Visualization and supported by the Visualization and Graphics Technical Committee (VGTC). EuroVis has been a Eurographics and VGTC co-supported international visualization symposium held in Europe annually since 1999. EuroVis graduated to a conference in 2012.

The exciting and vibrant field of Visualization is an increasingly important research area due to its wide range of applications in many disciplines. In general, our ability to collect, store, and archive data vastly exceeds our ability derive useful knowledge and insight from it. This is a ubiquitous challenge. Data visualization is key in gaining an understanding large, complex data sets by exploiting the human visual system. Data visualization leverages computer graphics in order to provide a visual overview, explore, analyze, and present phenomena which is often difficult to understand.

The main conference is preceded by co-located events such as EuroVA 2014, the 5th international EuroVis Workshop on Visual Analytics and, co-located for the first time, the Eurographics Symposium on Parallel Graphics and Visualization (EGPGV) 2014, which is held in the same location 9-10 June 2014. Other co-located events include the 2nd Workshop on Visualization in Environmental Sciences (EnvirVis), the Towards Visualization Literacy and Toward Visualization-Specific Heuristic Evaluation Workshops, an outreach event: Introduction to Data Visualization, and another outreach event: the Workshop on Open Source in Visualization (OSVIS).

New to EuroVis 2014

For the first time in 2014, EuroVis also features a survey paper track (also known as State-of-the-Art Report, STAR) which aims to describe an overview presentation of a particular sub-field of data visualization. STAR papers are electronically archived and are fully citeable publications which undergo a one-stage peer-review process by an international program committee. A selection of STAR submissions is invited for a subsequent submission to the CGF journal. Short papers feature two acceptance categories: accept for oral presentation and accept as poster presentation. This way, more presenters will have the opportunity to showcase their work. This year also featured a Workshops call for participation as well as a selection of invited Computer Graphics Forum papers. Delicious Welsh cakes will be served daily. Freshly baked Welsh cakes have an addictive quality to them. EuroVis takes place in the UK only once approximately every ten years, and is located in historic Wales for the very first time, so we are grateful for this opportunity.

Paper Reviewing

After the submission deadline in early December 2013, 161 manuscripts were reviewed in a two-stage process that resulted in 42 accepted papers and an acceptance rate of 26%. During the first review cycle, each paper was reviewed by at least four reviewers. The primary and secondary reviewers were members of the International Program Committee (IPC) and each selected at least one additional tertiary reviewer from outside the IPC. The IPC was a truly global body with representatives from Europe (including the UK, Germany, Austria, Sweden, France, Italy, Switzerland, and the Netherlands), North America (the US and Canada), Asia (India), the Middle East (Saudi Arabia), and South America (Brazil). The Eurovis IPC membership is continually refreshed, with a typical three-year term followed by a rest period.

The review process was double-blind for tertiary reviewers: only the members of the IPC and the chairs knew the identity of the authors. A great effort was made to identify and prevent conflicts of interest at all

levels, and all reviewers were asked to read and agree to the IEEE Visualization and Graphics Technical Committee (VGTC) ethics guidelines.

After all the reviews were completed, the primary reviewer led an online discussion among all reviewers and was responsible for writing a summary review and recommendation. These discussions were thoughtful and lively, sometimes with more than twenty entries in the discussion board. 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 chairs, 42 papers were conditionally accepted. Five additional papers were deemed to have substantial potential after major revisions, and were invited for a fast-track review process to Computer Graphics Forum for possible publication in a future issue. In the second review cycle, the revised papers were carefully reviewed again by the primary reviewers. Due to the significant improvements made by authors, all 42 were ultimately accepted for publication.

Thanks
We offer our sincere thanks to the full paper IPC member for their expert assistance in all stages of the reviewing process and to the tertiary reviewers for their careful assessment of the submissions. We particularly appreciate the efforts of primaries to provide substantial constructive feedback on papers not accepted to help authors guide their future research.

We also thank the local organizational Co-Chairs, Daniel Archambault, Robert Gittins, Benjamin Mora, and Gary Tam, and the Short Paper Co-Chairs Niklas Elmqvist, Mario Hlawitschka, and Jessie Kennedy. We thank the STARs Co-Chairs Rita Borgo, Ross Maciejewski, and Ivan Viola and the Workshop Co-Chairs David Ebert, Daniel Keim, and Helen Purchase. We appreciate the work of the Fast Forward Co-Chairs Christoph Garth and Luana Micallef. We thank the organizers of the co-located events: Margit Pohl, Jonathan Roberts, Carsten Dachsbacher, Margarita Amor, Markus Hadwiger, Karsten Rink, Olaf Kolditz, Gerik Scheuermann, Mario Romero, Maria Velez, Greg McInerny, Deborah Silver, Rita Borgo, Camilla Forsell, Ann Fruhling, Georges Grinstein, Jean Scholtz, Alvin Tarrell. Andy Kirk, Julien Jomier, and Joachim Pouderoux.

We thank the student volunteer James Walker. We thank Jodie Barlow-Haynes and Alexandra Evans for their organizational support. We thank Neil Sutton the EuroVis 2014 web master and Mike Laramee for the Eurovis 2014 artwork. Thanks to James Stewart for help with Precision Conference, Klaus Mueller for VGTC support and Meghan Haley for AV support. We thank the IPCs and reviewers of the STARS, short papers, posters, and workshop proposals. We are also grateful for the heroic efforts of Stefanie Behnke for producing the proceedings and digital archive and for help with SRM.

Finally, we are grateful for the contributions of our sponsors: (Gold Sponsors) ESPKTN (Electronic Sensors and Photonics Knowledge Transfer Network, HIP (Harwell Imaging Partnership), We Predict Ltd, Grid-Tool Ltd, Winton Capital Ltd, KAUST (King Abdullah University of Science and Technology), Tableau Ltd., (Silver Sponsors) Swansea University College of Science, (Bronze Sponsors) NVIDIA, NCT Wales, VACCINE, Springer, (In cooperation with) Eurographics, HPC Wales, CRC Press, 3D Visualization World, University of Oxford, RIVIC, and the Wales Festival of Innovation.

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Keynote – 3D Vision in a Changing World

Andrew Fitzgibbon
Head of Computer Vision Group at Microsoft Research, Cambridge

Abstract

Three-dimensional reconstruction from images has been a tremendous success-story of computer vision, with city-scale reconstruction now a reality. However, these successes apply almost exclusively in a static world, where the only motion is that of the camera. Even with the advent of realtime depth cameras, full 3D modelling of dynamic scenes lags behind the rigid-scene case, and for many objects of interest (e.g. animals moving in natural environments), depth sensing remains challenging. In this talk, I will discuss a range of recent work in the modelling of nonrigid real-world 3D shape from 2D images, for example building generic animal models from internet photo collections. While the state of the art depends heavily on dense point tracks from textured surfaces, I will talk about recovering shape from largely textureless objects such as dolphins, by incorporating the strong constraints given by the object's silhouette.

Short Biography

Andrew Fitzgibbon is a principal researcher at Microsoft Research Cambridge, where he heads the computer vision group. He is best known for his work on 3D vision, having been a core contributor to the Emmy-award-winning 3D camera tracker "boujou" (www.boujou.com) and Kinect for Xbox 360, but his interests are broad, spanning computer vision, graphics, machine learning, and even a little neuroscience. He has published numerous highly-cited papers, and received many awards for his work, including 9 "best paper" prizes, the Silver medal of the Royal Academy of Engineering, and the BCS Roger Needham award. He is a fellow of the British Computer Society, and of the International Association for Pattern Recognition. Before joining Microsoft in 2005, he was a Royal Society University Research Fellow at Oxford University, having previously studied at Edinburgh University, Heriot-Watt University, and University College, Cork.

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Capstone – The Value of Visualization...and Why Interaction Matters

John T. Stasko
Director of the Information Interfaces Research Group
Georgia Institute of Technology, Atlanta

Abstract

Visualization researchers need to do a better job communicating the value of our field externally. Visualization, by its very nature, provides inherent challenges to doing this. In this talk I will explain these challenges and articulate my views on the value of visualization, including its unique capabilities for data presentation and analysis. I will describe the advantages of interaction, and discuss in depth why interaction is so important to our field and how it has been under-utilized to date. Finally, I will present a number of new interaction ideas and techniques that can be integrated into our future systems.

Short Biography

John Stasko is a Professor in and the Associate Chair of the School of Interactive Computing at the Georgia Institute of Technology. He also is an Honorary Professor in the School of Computer Science at the Univ. of St. Andrews in Scotland. Stasko is an internationally recognized and widely published researcher in the area of human-computer interaction, with a specific focus on information visualization and visual analytics. He has been Papers/Program Co-Chair for the IEEE Information Visualization (InfoVis) Conference, the IEEE Visual Analytics Science and Technology (VAST) Conference, and the ACM Software Visualization (SoftVis) Symposium. He also has served on numerous journal editorial boards including ACM Transactions on Computer-Human Interaction, IEEE Transactions on Visualization and Computer Graphics, and Information Visualization. In Fall 2013 he was General Chair for the IEEE VIS meeting in Atlanta. Stasko was named an ACM Distinguished Scientist in 2011 and an IEEE Fellow in 2014. He received the IEEE VGTC Visualization Technical Achievement Award in 2012.