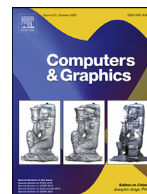




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## Editorial

## Foreword to the special section on smart tool and applications for graphics (STAG 2019)



This special issue contains extended and revised versions of the best papers presented at the 6th Smart Tools and Applications in Graphics (STAG 2019), held in Cagliari, on 14–15 November, 2019. STAG is the annual international conference organized by the Italian Chapter of the Eurographics association (EG-IT). In 2019, it was organized by the Visual Computing Group of CRS4 (Center for Advanced Studies, Research and Development in Sardinia) and the University of Cagliari. The local chair was Ruggero Pintus, while Marco Agus and Massimiliano Corsini were the paper chairs. Poster chairs were Daniela Giorgi and Alberto Jaspe, and Rita Borgo and Marco Livesu served as "Matteo Dellepiane" Thesis Awards Chairs. The conference purpose is the dissemination of research activities and novel insights in terms of both theoretical and application-based contributions related to Computer Graphics, involving national and international researchers and practitioners from the scientific community in order to share their latest works.

For the 6th Edition of STAG, we adhered the standard dissemination policies of the main EG event, by separating contributions in two categories: oral presentations associated to full papers with maximum length of ten pages, and poster presentations associated to a sketch paper with maximum length of two pages. We received 26 submissions (21 full papers, 5 posters). The submitted works underwent extensive review (double blind) by a heterogeneous International Program Committee composed by 30 persons from around the world with a wide and consolidated expertise in Visual Computing, Computer Graphics and Vision, and related disciplines. Each submission has been independently reviewed by at

least four reviewers, who were selected by their preferences, expertise, and conflicts, and the final decision has been made after a thorough discussion among program chairs. At the end of the process, thirteen contributions have been accepted as full papers (62% acceptance rate). Among five posters, four have been accepted (80% acceptance rate) and one has been rejected.

The STAG2019 technical program started with the keynote talk of Prof. Dr. Renato Pajarola, director of the Visualization and Multimedia Lab of the Department of Informatics - University of Zurich. In his talk, titled 3D Indoor Reconstruction from Point Clouds, Prof. Pajarola provided an extensive overview on the automatic extraction of architectural 3D models from scanned interior environments as well as the extraction of higher-level and abstract semantic information. After that, the main technical program consisted of four sessions of full papers and one poster session. The first full paper session was dedicated to the Best Paper Award Nominees, talks of a selection of the three most outstanding full papers, while the other sections covered the three main topics of contributions, i.e., "Geometry", "Representation & Synthesis", and "Libraries".

The EG Italian chapter decided from this year to entitle the traditional awards for best thesis "in memoriam" of our dear friend and colleague Matteo Dellepiane. The committee was chaired by Rita Borgo and Marco Livesu, and "Matteo Dellepiane" awards were given to Irene Filoscia (Best MSc Thesis: Shape Segmentation for Support-Free 3D Printing) and Gianmarco Cherchi (Best PhD Thesis: Polycube Optimization and Applications. From the Digital World to Manufacturing)



**Fig. 1.** The special section contains extended versions of three best contributions of STAG 2019 conference. Left: a framework for fully interactive non-linear spatio-temporal exploration of massive time-varying rectilinear scalar volumes on commodity platforms [1]. Middle: a visualization system for reviewers for identifying researchers working on a certain topic, analyzing their contributions over time, and highlighting co-authorship relations and conflicts [2]. Right: a VR environment for editing and proofreading medial axis representations of nanoscale brain cell morphologies [3].

This time, the best papers were selected on the basis of both the reviewing scores and reviewers comments, received for the conference, and on the basis of a further evaluation performed by the Program Chairs. Authors were invited to submit a revised and extended version to Computers and Graphics, where they followed a further review cycle, in which four independent reviewers were involved (three coming from conference program committee, plus one external). The result is a collection of three papers spanning different visual computing domains (see Fig. 1): specifically, a framework for real-time space-time exploration of massive time-dependent volume data [1], a web-based visual analytics system for reviewer selection in academia [2], and a VR-system for editing and proofreading medial axis representations of branched brain cell 3D nanoscale reconstructions [3], this latter being also awarded of the replicability stamp by The Graphics Replicability Stamp Initiative (GRSI - replicabilitystamp.org).

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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**Marco Agus** is currently Assistant Professor at Hamad Bin Khalifa University (HBKU) - Qatar Foundation in Doha, Qatar. He was previously research engineer at King Abdullah University of Science and Technology (KAUST), in Jeddah, Saudi Arabia and for long time research scientist at Center of Research, Development and Advanced Studies (CRS4), in Cagliari, Italy. He received M.Sc. and Ph.D. degrees from the University of Cagliari, Italy. His research interests span different domains in visual computing, from haptics and visual rendering for surgical simulation, to rendering and natural interaction on light field displays, to real time exploration of massive digital heritage models, to processing and visual exploration of connectomics and electron microscopy biology data. He published more than 40 peer-reviewed papers on these topics, with more than 800 total citations. He taught courses at most important visual computing venues, like ACM Siggraph and EG, and he regularly serves as committee member and reviewer for top journals and conferences in the field.



**Massimiliano Corsini** received a PhD degree in Information and Telecommunication Engineering from the University of Florence. He is currently a researcher at the Visual Computing Laboratory of the ISTI-CNR in Pisa, Italy. He worked on appearance and shape acquisition of real objects, advanced visualization for Cultural Heritage applications, and visual media productions. His current research regards the applications of Artificial Intelligence, Computer Graphics, and Computer Vision to Monitoring, Digital Humanities, Mobile Robotics, and Visual Analytics. During his career, he developed new algorithms and software tools documented in more than 60 publications in peer-review international conferences and journals. He also collaborated in several National and International projects and served on numerous program committees.



**Ruggero Pintus** received his master's degree in Electronic Engineering at the University of Cagliari in Italy. There, he also received the Ph.D. in Electronic and Computer Engineering in 2007, working on Computer Vision algorithms applied to Scanning Electron Microscope. He worked as a visiting researcher in the Hewlett-Packard Laboratories, California, US. His research focused on photometric stereo techniques applied to conventional flatbed scanners. Since 2007 he has been part of the Visual Computing group of CRS4. His primary research focus is the development of algorithms for acquisition, out-of-core processing, time-critical rendering and 3D printing of massive models, mostly applied to large scale color and geometry Cultural Heritage datasets. In 2013 he worked as a Postdoctoral Associate Research Scientist in the Computer Graphics Group at the Yale University. His research focused on 3D model scanning/processing, and on multi-spectral imaging acquisition and document layout analysis techniques applied to historical medieval manuscripts. Recently his research is focusing on Multi-Spectral Photometric Stereo and Reflectance Transformation Imaging (RTI) acquisition, calibration and processing for geometry and appearance reconstruction.

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