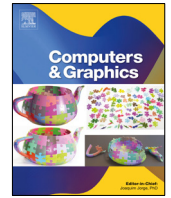




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## Editorial

# Foreword to the Special Section on CEIG 2022

This Special Section of the journal *Computers & Graphics* is devoted to the selected best papers submitted to the 31st edition of the Spanish Conference on Computer Graphics (CEIG) 2022. This edition was held in Vic (Spain) during July 5–8th. This annual conference is sponsored by the Spanish Section of the Eurographics Association and the main goal is to promote discussion between computer graphics researchers and practitioners in Spain, as well as to disseminate recent advances in the field and present ongoing works. The conference traditionally includes regular paper sessions, invited talks presenting high-quality recently published works, short papers, poster presentations, and keynote talks from internationally renowned speakers in all areas of computer graphics and visual computing.

This year five of the papers submitted to the conference were selected based on their high quality and after a rigorous, complete two-cycle peer-review by no less than three experts in the field, are published in this Special Section. The selected papers cover diverse topics. Bernal et al. [1] present in their work a novel saliency prediction model for 360° videos based on spherical convolutions and recurrent neural networks to extract the relevant spatio-temporal features. This model outperforms various state-of-the-art works in predicting human visual attention when exploring dynamic 360° content. The work presented by Etxezarreta et al. [2] addresses the problem of predicting contact areas for grasping complex geometries by robotic grippers. Existing approaches typically simplify either the gripper or the shape of the object. Instead, this work integrates a fast collision detection system to the grasping process that can approximate contact surfaces between arbitrarily complex grippers and grasped objects in real-time. Experimental results are shown with extensive simulations for multiple shapes and resolutions. López et al. [3] present a method for the generation of hyperspectral point clouds. Existing solutions use LiDAR and hyperspectral sensors integrated into the same acquisition system which can lead to errors derived from inertial measurements for data fusion and the limited resolution of the LiDAR. This work provides a solution for generating, compressing and rendering 3D hyperspectral point clouds from input data composed of push-broom hyperspectral and 3D point clouds. Muñoz-Pandiella et al. [4] introduce an automatic algorithm to minimize RGB color differences among a collection of registered panoramic HDR images captured with Terrestrial Lidar Scanners. Typically, these collected images are used to colorize the accompanying point clouds, however, due to existing color differences between the different panoramas, this can lead to artifacts. After applying the proposed method, the processed panoramas can be used to colorize point clouds consistently. Finally, in their work Royo et al. [5] introduce a set of subpath sampling techniques targeting transient light transport simulation in occluded

scenes. These techniques are implemented in a modified version of Mitsuba 2 that supports transient light transport, therefore the implementation also supports parallelization, polarization and differentiable rendering.

We would like to thank the Keynote speakers, Prof. Yiorgos Chrysanthou (CYENS Centre of Excellence - University of Cyprus), Dr. Duygu Ceylan (Adobe Research), and Dr. Oscar Argudo (Universitat Politècnica de Catalunya) for participating in this edition and delivering very exciting talks about a diversity of topics. We would also like to thank the program committee for their valuable reviews and feedback on the submitted articles. Finally, we thank the members of the executive board of the Eurographics Spanish Section for inviting us to serve as Program Chairs for this year's CEIG, as well as the *Computers & Graphics* Editor-in-Chief and the Elsevier staff for their help in making this Special Section a success.

### 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.

### References

- [1] Bernal E, Martin D, Gutierrez D, Masia B. SST-Sal: A spherical spatio-temporal approach for saliency prediction in 360° videos. *Comput Graph* 2022;106:200–9.
- [2] Etxezarreta-Arruti A, Sagardia M. Real time contact surface prediction for grasping with complex geometries. *Comput Graph* 2022;107:66–72.
- [3] López A, Jurado JM, Jiménez JR, Feito FR. Generation of hyperspectral point clouds: Mapping, compression and rendering. *Comput Graph* 2022;106:267–76.
- [4] Muñoz-Pandiella I, Comino M, Andujar C, Argudo O, Bosch C, Chica A, et al. Gain compensation across LIDAR scans. *Comput Graph* 2022;106:174–86.
- [5] Royo D, Garcia J, Muñoz A, Jarabo A. Non-line-of-sight transient rendering. *Comput Graph* 2022;107:84–92.



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on applying perceptually-motivated solutions. Her work has been published in top venues, including ACM Trans. on Graphics, Scientific Reports, and IEEE TVCG. She is Associate Editor for Computers & Graphics, Graphics & Visual Computing, and Trans. on Applied Perception. She has also served in several technical papers program committees, including ACM SIGGRAPH, Eurographics, or IEEE VR and she has been program chair of conferences such as the ACM Symposium on Applied Perception and CEIG.



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