

Best Paper Awards 2021

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Announcing the Best Paper and Best Associate Editor awards.

The objective of the Best Paper Award, fully sponsored by the IEEE Computer Society (CS) and initiated by the CS Publications Board in 2019, is to acknowledge and reward the best articles published in the previous year. The selection of the 2021 *IEEE Computer Graphics and Applications* (CG&A) Best Paper Award was conducted by a committee chaired by the Associate Editor-in-Chief, Richard Zhang. The committee members include Ruizhen Hu, an Associate Professor from Shenzhen University, and Philip Chi-Wing Fu, a Professor from the Chinese University of Hong Kong. All the papers published in 2021 in the special issues and regular queues were reviewed by the committee, after which a shortlist was made. The committee members then voted for the best paper from the shortlist. The award selections, including both a winner and two runners-up (tied in votes) were recommended to Editor-in-Chief Torsten Möller. The Editor-in-Chief then sent his recommendation to the IEEE CS Publications Board. The 2021 winner, as conferred by the Publication Board, is “Reconstructing Unsteady Flow Data From Representative Streamlines via Diffusion and Deep-Learning-Based Denoising,” by Pengfei Gu, Jun Han, Danny Z. Chen, and Chaoli Wang [A1].

All the authors of the award winner are from the Department of Computer Science and Engineering, University of Notre Dame. This article was part of the IEEE CG&A Special Issue on Powering Visualization With Deep Learning. Quoting the Guest Editors, “this article investigates how to use streamlines to recover unsteady flow data (UFD). Specifically, the authors present a new deep learning framework that performs vector field reconstruction for UFD, which first generates low-quality

UFD via diffusion, and then reconstructs high-quality UFD through the designed neural nets.” The award committee members were all impressed by the quality of the reconstructed UFD compared to the ground truth and the competitors.

The first co-runner-up of 2021 goes to “Narrative Physicalization: Supporting Interactive Engagement With Personal Data,” by Maria Karyda, Danielle Wilde, and Mette Gislev Kjærsgaard [A2].

The first author of this article is from Aalto University, Finland, while the others are from the University of Southern Denmark. This article was published as part of the Special Issue on Data Physicalization. It explores and expands the space of data physicalization by borrowing from narrative visualizations, storytelling with graphs, and engagement with mundane artifacts from data objects, so that everyday objects can be modified to support nuanced self-reflection through embodied engagement with personal data. To date, this article has received the highest number of citations among all CG&A papers published in 2021.

The second co-runner-up of 2021 goes to “Gamification of Crowd-Driven Environment Design,” by Brandon Haworth, Muhammad Usman, Davide Schaumann, Nilay Chakraborty, Glen Berseth, Petros Faloutsos, and Mubbasir Kapadia [A3].

Accepted in the regular queue, this work was the result of a collaboration between multiple institutions including the University of Victoria, York University, Université de Montréal, Cornell Tech, and Rutgers University. Through a usability study, this article explores whether crowd-sourced human creativity within a gamified collaborative design framework can address the complexity of predictive environment design. The committee members were all intrigued by the authors’ exploration to leverage crowd-sourced human creativity and the promising applications for content creations in AR/VR and the metaverse.

BEST ASSOCIATE EDITOR AWARD



In recognizing excellence in serving CG&A as an Associate Editor (AE) over the period of 2021–2022, we are happy to present to three of our colleagues the Best Associate Editor Award. The awardees are Wei Chen, a professor with the State Key Lab of CAD & CG at Zhejiang University, Sören Pirk, a Senior Research Scientist at Adobe Research, and Xin Tong, a partner research manager with Microsoft Research Asia, leading the Internet Graphics Group. The Best AE awards were selected based on quality, timeliness, and volume of the reviews performed. Congratulations to Wei, Sören, and Xin for a job well done!

APPENDIX: RELATED ARTICLES

- [A1] P. Gu, J. Han, D. Z. Chen, and C. Wang, "Reconstructing unsteady flow data from representative streamlines via diffusion and deep-learning-based denoising," *IEEE Comput. Graph. Appl.*, vol. 42, no. 6, pp. 111–121, Nov./Dec. 2021. [Online]. Available: <https://www.computer.org/csdl/magazine/cg/2021/06/09456980/1utV8GYtcju>
- [A2] M. Karyda, D. Wilde, and M. G. Kjærsgaard, "Narrative physicalization: Supporting interactive engagement with personal data," *IEEE Comput. Graph. Appl.*, vol. 41, no. 1, pp. 74–86, Jan./Feb. 2021. [Online]. Available: <https://www.computer.org/csdl/magazine/cg/2021/01/09200790/1ndVAIKBPuU>
- [A3] B. Haworth et al., "Gamification of crowd-driven environment design," *IEEE Comput. Graph. Appl.*, vol. 41, no. 4, pp. 107–117, Jul./Aug. 2021. [Online]. Available: <https://www.computer.org/csdl/magazine/cg/2021/04/08964083/1gKkSM2MVFe>

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