

Introducing the IEEE Virtual Reality 2019 Special Issue



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Welcome to the 8th *IEEE Transactions on Visualization and Computer Graphics* (TVCG) special issue on IEEE Virtual Reality and 3D User Interfaces. This volume contains a total of 33 full papers selected for and presented at the IEEE Virtual Reality and 3D User Interfaces (IEEE VR 2019) Conference held in Osaka, Japan in March 23-27, 2019. Founded in 1993, IEEE VR has a long tradition as the premier venue where new research results in the field of Virtual Reality (VR) are presented. With the emergence of VR as a major technology in a diverse set of fields, such as entertainment, education, data analytics, artificial intelligence, medicine, construction, training, and many others, the papers presented at IEEE VR and published in the IEEE TVCG VR special issue mark a major highlight of the year.

TVCG and VR have enjoyed a fruitful cooperation for eight years now. This collaboration is a cornerstone in TVCG's mission to combine computer graphics and data visualization with virtual (VR), mixed (MR), and augmented reality (AR) – XR for short. The special issue format combines speed of publication with all the established advantages of an archival journal. All papers published here have undergone a rigorous and competitive two-round review process to ensure the highest quality possible.

In fact, the benefits of the collaboration between TVCG and IEEE VR go both ways. Not only are VR papers published in the TVCG VR special issue, but also authors of VR-themed TVCG regular papers can accept our call to give an oral presentation of their work at IEEE VR. This provides a unique opportunity for both the authors of these papers as well as for the conference audience. TVCG authors get to highlight their important work to their peers, and the conference audience gets to see more exciting VR research and also learns about the high-quality VR research featured in TVCG.

We would like to sincerely thank the many colleagues who have committed their time and effort to the creation of this TVCG issue. In particular, we thank the guest editors of this special issue, the IEEE VR 2019 program chairs, Bruce Thomas, Greg Welch, Torsten Kuhlen, and Kyle Johnsen,

for organizing the two-round review process, lead the program committee, and make sure that academic quality was maintained at the highest level. We would also like to recognize the outstanding efforts that went into the timely production of this issue by the IEEE and IEEE Computer Society staff, especially Erin Espriu, Katelyn Seyffart, and Kimberly Sperka, as well as the IEEE VR publication coordinator, Meghan Haley. Thanks are also due to Natalie Cicero and Alison Larkin for TVCG peer review support. Finally, we would also like to acknowledge the support from behind the scenes by the IEEE VR Steering Committees, the IEEE VGTC Executive Committee, and the IEEE Computer Society Publications Board.

TVCG welcomes submissions from all fields of visual computing, ranging from graphics and visualization all the way to augmented and virtual reality. Accepted papers can be orally presented at our partner conferences (see <http://www.computer.org/portal/web/TVCG/Conference-Partners>). TVCG is well known for its fast reviewing cycles and for the early availability of preprints in the IEEE Computer Society Digital Library and in IEEE Xplore. TVCG offers a great opportunity for the presentation of high-profile research results and survey papers on important new topics.