

IEEE VR 2024 Message from the Program Chairs

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We are pleased to present the proceedings of the 31st IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR 2024), held March 16–21, 2024, in Orlando, Florida, US, in on-site format. These proceedings contain 101 of the 180 IEEE VR 2024 papers, with the other 79 papers being published in the IEEE VR 2024 special issue of the *Transactions on Visualization and Computer Graphics*. IEEE VR 2024 had 627 submissions for an acceptance rate of $101/627=16.1\%$ as conference papers, or $180/627=28.7\%$ when including the journal papers.

Like last year, IEEE VR 2024 had a unified, single-track submission and review format. As program chairs, we were charged with the implementation of this unified submission and review process that resulted in the 101 papers appearing here.

Paper reviews were overseen by the international program committee. Given the unified submission format, we expected a large number of submissions, and attempted to recruit a large program committee to reduce the reviewing load on our colleagues. This year's program committee consisted of 153 experts in the areas of virtual, augmented, and mixed reality, and 3D user interfaces, recruited from around the world. We strived to improve gender and geographic representation on the committee. The review process would not have been possible without the earnest efforts of these 153 people, and we wholeheartedly thank them for their service to our community in reviewing and shepherding a large number of submissions on tight deadlines.

Under the unified submission and review format, the decision as to whether a submission would be selected to appear as part of the conference proceedings was made based on scoring, with the higher-scoring papers being recommended for *TVCG*. The decision pipeline had several stages. Initially, each paper was assigned a primary and a secondary reviewer from the program committee. These assignments were based on a combination of bidding by program committee members and of expertise matching scores computed based on committee members' uploaded sample papers. Then, an initial assessment of the papers occurred during which some papers were desk-rejected due to a failure to follow the submission guidelines. The reasons for desk rejection were most often failure to anonymize the paper, failure to follow formatting guidelines, or being clearly out of scope for the conference. We implemented a new early-rejection process with the goal of reducing the reviewing load on the community. As part of this, secondary reviewers were asked to complete their full reviews early, before any external reviewers were invited. In case of a low score, the primary reviewer was asked to review the paper as well. If both scores were low, and if there was a consensus between both the primary and secondary reviewers, the submission was early rejected.

For all submissions that advanced to the full review cycle, the primary and secondary reviewers assigned at least two external

reviewers. The secondary and external reviewers performed extensive reviews of each assigned submission, resulting in at least three reviews per submission. After these reviews were completed, the primary led an online discussion in which the reviewers for each paper attempted to come to a consensus on an initial recommendation for the submission among four possibilities: conditionally accept, recommend as a major revision to *TVCG* with review continuity, conditionally accept as poster, or reject. Major revision papers are not presented at IEEE VR 2024, they are not included in the IEEE VR 2024 proceedings, and they are not included in the special issue of *TVCG*. Like last year, in this phase of the review process, reviewers were not asked to decide whether a submission should be recommended for acceptance as a conference paper or as a *TVCG* paper, but rather just whether the submission should be recommended for acceptance to IEEE VR 2024. The goal of the approach was to first identify all high quality papers that should be presented at IEEE VR 2024, and then to select as many of the top papers as possible for *TVCG*, in agreement with *TVCG*'s Editor-in-Chief Han-Wei Shen (EIC) and Associated Editor-in-Chief Kiyoshi Kiyokawa (AEIC).

The second stage of the process commenced at the conclusion of the individual submission discussion phase and had the goal of finalizing the international program committee conditional acceptance recommendations to the program chairs. To make live meetings tractable, this second stage involved a subset of 23 members of the international program committee (13 more than the 10 from last year), a subset we called the Supercommittee. The second stage considered 334 submissions (up from 200 last year), i.e., all submissions recommended for conditional acceptance, without reviewer consensus, recommended for major revision to *TVCG*, and not recommended for conditional acceptance but with high reviewer scores. All submissions not considered in the second stage were rejected. Each of the 334 submissions were assigned one Supercommittee member and one program chair, who were tasked to check the reviews and the recommendation, and to flag submissions for discussion. The flagged submissions were discussed by the Supercommittee and the program chairs in one of three online meetings. As the result of the second stage the 334 submissions were either recommended for conditional acceptance, for presentation as posters, for major revision to *TVCG*, or for rejection. We extend our heartfelt gratitude to the 23 Supercommittee members for their hard work: Bobby Bodenheimer, Evan Suma Rosenburg, Francisco Ortega, John Quarles, Pablo Figueroa, Praneeth Chakravarthula, Victoria Interrante, Bruce Thomas, Daisuke Iwai, Denis Kalkofen, Hideo Saito, Lili Wang, Mariko Isogawa, Taehyun Rhee, Xubo Yang, Anne-Helene Olivier, Bernd Froehlich, Gudrun Klinker, Ian Williams, Marina Cidota, Maud Marchal, Michele Fiorentino, Shohei Mori.

In order to give as many deserving submissions a chance for presentation at IEEE VR 2024, the authors of 87 high scoring submissions not recommended for conditional acceptance were invited to submit a rebuttal to the reviews. Based on the rebuttals, and with the consensus of two of the program chairs, 50 of these 87 submissions were conditionally accepted as conference papers.

Papers that were conditionally accepted, either as a conference paper or to *TVCG*, were then shepherded through a minor revision cycle by the primary reviewer from the program committee. The primary reviewer eventually signed off on whether reviewer concerns were satisfactorily addressed in the final version. During the shepherding process, papers that did not satisfactorily address the revision requirements were not accepted for publication. The program chairs then checked all papers one final time for completeness. Camera-ready versions of both *TVCG* and conference publications were checked for compliance with the formatting guidelines by the IEEE VR 2024 publications chairs.

The excellent papers selected for presentation at IEEE VR 2024 cover a wide range of topics, including locomotion, tracking, perception, interaction, immersive games and videos, cybersickness, projection mapping, and applications, to name a few. The program is diverse and innovative, reflecting the vibrancy of our field.

Many individuals contributed significant time and energy in putting together the technical program presented at the conference and published in the conference proceedings and in the *TVCG* special issue. We would like to thank all the authors for the time and effort they put into the 627 submissions that were considered. IEEE VR is competitive, and we hope that even if your work does not appear in the special issue or conference program, the feedback received from the review process is useful to you. We would like to thank the 632 external reviewers and again the 153 members of the program committee for their labor, for without them nothing could have been accomplished. The program committee and reviewers are the backbone of any conference. The Supercommittee performed an invaluable service this year. The Posters chairs and Publications chairs did an enormous amount of work in rounding out the program. Finally, we would like to thank the Virtual Reality Steering Committee for their valuable advice and leadership and the General Chairs for their support.