



Association for
Computing Machinery

Advancing Computing as a Science & Profession



ACM INTERNATIONAL
CONFERENCE ON
INTERACTIVE MEDIA
EXPERIENCES

June 12–14, 2024
Stockholm,
Sweden



IMX 2024

Proceedings of the 2024 ACM International Conference on
Interactive Media Experiences

Sponsored by

ACM SIGCHI, ACM SIGMM & DigitalFutures

Supported by

Stockholm University & RISE

Hosted by

Stockholm University



Association for
Computing Machinery

Advancing Computing as a Science & Profession

The Association for Computing Machinery
1601 Broadway, 10th Floor
New York, New York 10019, USA

ACM COPYRIGHT NOTICE. Copyright © 2024 by the Association for Computing Machinery, Inc. Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from Publications Dept., ACM, Inc., fax +1 (212) 869-0481, or permissions@acm.org.

For other copying of articles that carry a code at the bottom of the first or last page, copying is permitted provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, +1-978-750-8400, +1-978-750-4470 (fax).

ACM ISBN: 979-8-4007-0503-8

Welcome from the ACM IMX 2024 Chairs

With great pleasure we would like to welcome you to ACM IMX 2024, the leading international conference for presentation and discussion of research into Interactive Media eXperiences. Continuing from the successful legacy of the TVX proceeding series, ACM IMX connects international researchers and practitioners from human-computer interaction, multimedia engineering and design, to media studies, media psychology, sociology and beyond.

IMX has a strong commitment to and understanding of the importance of diversity within the community. To foster an open and diverse group of organizers, we invited community members to self-nominate for various chair and organizational roles. This call for applications was announced during the closing session of ACM IMX'23 in Nantes, France. Over two months, we received 12 applications, from which 5 candidates were selected to join as chairs in different positions. This approach allowed us to recruit both junior members and those interested in volunteering, who might not have otherwise been reached by traditional calls, pairing them with our selected team members. This year, we also focused on enhancing diversity and inclusion by ensuring a mix of experienced and emerging members on the organizing committee. This strategy aimed to provide mentoring opportunities for all, ensuring continuity and the development of future conference hosts.

With the help of our diversity chairs, who participated in all aspects of the organisation and decision making, and generous funding from ACM SIGMM and ACM SIGCHI we have a number of initiatives in place to increase access to the conference here in Stockholm, Sweden.

A special workshop focused on engaging with research and researchers from 'Latin America' as a region of interest was made possible due to the generous support from the SIGCHI Development Fund (SDF). The SDF fund supported the participation of 8 researchers (including workshop keynote speakers), enabling them to attend both the "IMX in Latin America - 2nd International Workshop" and the entire conference. A core objective of IMX-LATAM 2024 was to enhance diversity and expand the IMX community, particularly by encouraging colleagues from Latin America to attend the conference. The workshop's organizing committee received and reviewed submissions in a single-blind manner, evaluating them based on originality, creativity, impact, relevance to IMX LATAM topics, and presentation quality. The accepted papers were published as part of the ACM IMX'24 workshop proceedings in the ICPS series. In addition, SIGMM support has allowed us to introduce a number of initiatives, including travel and accommodation grants for students, early-career researchers, and diversity and inclusion support for those with extra burdens on attendance, be they parental, disability, or care-related. These measures were implemented to ensure that everyone, regardless of their circumstances, could participate fully in the conference. The availability of these opportunities was announced openly and widely, encouraging a broad range of applicants and promoting a more diverse and inclusive event. Candidates were selected through these open calls, with assistance from the diversity, inclusion, and accessibility chairs.

We continued IMX's long-standing papers mentoring program, which provides feedback and guidance from established researchers to authors submitting to IMX for the first time, who are in circumstances which are particularly adverse (e.g. a disability or personal circumstances which impact upon the paper preparation process), for whom English is a second language, or around particularly novel submission which may require additional input.

For the technical program, we saw a significant increase in submissions year-on-year. In response to our call for papers, we received 66 complete submissions from authors based in Africa, Asia, Europe, North America, and South America, marking the highest number of submissions in the last decade. The peer-reviewed selection process for the ACM IMX 2024 program was, as always, rigorous and thorough with a diverse group of Associate Chairs recruited both from an open call for volunteers and from within the community. The review process resulted in 26 papers being accepted for presentation at ACM IMX 2024, giving an overall acceptance rate of 39%. The Best of IMX 2024 paper contributions were selected by the chair of the award committee Vinoba Vinayagamorthy and two committee members Franziska Zimmer and Samuel Cox in conjunction with the Diversity and Inclusion chairs. The committee selected two papers for the *Best Paper* designation, and two papers for *Honorable Mention*.

The ACM IMX 2024 papers program was the result of a dedicated and sincere volunteer effort. We would like to thank our 19 hardworking associate chairs for generously giving their time to manage the review process, provide feedback to authors, and review some of the papers as well. Moreover,

their work would not have been possible without the 103 external reviewers who offered their expertise for the peer-review process, and our paper-writing mentors who offered feedback and guidance to authors seeking editorial tips, paper proofreads, and advice on how to structure papers.

On the pre-conference day, following workshops and the Doctoral Consortium, the opening reception of IMX 2024 in Stockholm was hosted by Ericsson. This event took place in the Open Box event space, in the Ericsson headquarters building. Attendees had the opportunity to engage with Ericsson engineers and researchers specialising in immersive technology.

Our keynote, delivered by Jake Elwes—an artist, hacker, radical faerie, and researcher—focused on queer artificial intelligence featuring deepfake drag performers. His work challenges us to consider who builds these systems and for what purpose, and explores whether artists and the queer community can reclaim these technologies to create our own digital utopias.

IMX 2024 included five workshops on the pre-conference day, providing an opportunity to discuss both familiar and new topics in an environment that encouraged active engagement and idea exchange. The workshops covered Interaction and Storytelling with(in) Immersive Media, Video for Immersive Experiences, Designing Meaningful Social XR, Conversational Interaction in Extended and Virtual Reality, and IMX in Latin America. Three of these workshops had expressed interest in publishing accepted submissions in the IMX ICPS series, and the arrangements were made, resulting in their publication. On the pre-conference day, we also held the doctoral consortium, where nine accepted PhD students shared their research and discussed it with their peers and senior mentors.

During the conference days, there were seven demos, sixteen work-in-progress posters, and nine IMX in industry talks and exhibitions presented. In addition to this, we have included 7 demo submissions from the IEEE International Conference on Quality of Multimedia Experience (QoMEX'24) being held in the south of Sweden the week after IMX. With demos from IMX also invited to showcase at QoMEX we hope this will further strengthen the connections between these overlapping communities.

We are also excited to continue the commitment to making IMX events and content more accessible. To support and promote the accessibility of proceedings, an external provider (TAPS) was asked to ensure accessibility of papers by completing the accessibility tagging prior to publication. Beyond the travel support for students, early career researchers, and Latin American researchers we provided childcare support, ensured all-gender bathrooms were available, included badge pronouns, and made sure senior members of the community were visible and available to ensure an inclusive and accommodating environment for all attendees.

We are grateful to the Organizing Committee, reviewers and everyone involved in the process of making this conference a success. We thank as well our sponsors and supporters ACM SIGCHI and ACM SIGMM, Stockholm University, Research Institutes of Sweden, Digital Futures, and Ericsson for providing the means to make this conference creative, exciting, and meaningful. Finally, we would like to thank you all.

Asreen Rostami

RISE, Research Institutes of Sweden
IMX 2024 General Chair

Donald McMillan

Stockholm University, Sweden
IMX 2024 General Chair

Irene Viola

CWI, Netherlands
IMX 2024 Technical Paper Chair

Jun Nishida

University of Maryland, USA
IMX 2024 Technical Paper Chair

Jonathan Hook

York University, UK
IMX 2024 Technical Paper Chair

Sujithra Raviselvam

TU/e, Netherlands
IMX 2024 Diversity & Inclusion Chair

Samantha Chan

MIT Media Lab, USA
IMX 2024 Diversity & Inclusion Chair