Report on the 23rd International Society for Music Information Retrieval Conference (ISMIR 2022)

Preeti Rao
IIT Bombay
India
prao@ee.iitb.ac.in

Hema A. Murthy
IIT Madras
India
hema@cse.iitm.ac.in

Ajay Srinivasamurthy
Amazon Alexa
India
ajays.murthy@gmail.com

Abstract

The annual International Society for Music Information Retrieval (ISMIR) conference is the world's leading research forum on processing, searching, organizing and accessing music-related data. The 23rd International Society for Music Information Retrieval Conference (ISMIR 2022) was held from 04–08 December, 2022 at the National Science Seminar Complex, Indian Institute of Science, Bengaluru, India. ISMIR 2022 is the first ever ISMIR conference to take place in India. Due to the changing global landscape as a result of the COVID-19 pandemic, the 23rd ISMIR conference became the first hybrid ISMIR conference, with both in-person and remote participants. The scientific program of the single-track conference comprised two keynotes, 113 research papers, six tutorials, 13 music pieces and five special sessions. The conference also included a Women in MIR (WiMIR) plenary session, industry presentations, a late-breaking/demo session, five satellite events, and multiple social events that showcased the rich musical and cultural heritage of India. In this report, we present a summary of the event, highlighting some unique challenges we faced organizing the hybrid conference and reflecting on the event for future improvements.

Date: 04–08 December 2022.

Website: https://ismir2022.ismir.net.

1 Introduction

The International Society for Music Information Retrieval (ISMIR) represents the largest body of scholars, researchers and practitioners in the field of Music Information Retrieval (MIR), an interdisciplinary research area concerned with processing, analyzing, organizing and accessing music information. The scope of ISMIR extends across the fields of computer science, musicology, cognitive science, library & information science and electrical engineering. Our community hence reflects a diversity of scientific disciplines, seniority levels, professional affiliations, and cultural backgrounds. The annual ISMIR conference is the world's leading research forum on processing, searching, organizing and accessing music-related data.

The 23rd International Society for Music Information Retrieval Conference (ISMIR 2022) was held in a hybrid format from 04–08 December, 2022 hosted in Bengaluru, India. The ISMIR conference in India came at a very appropriate time, when we are seeing a steadily growing interest in MIR in both academic institutions and start-ups in the country. After two editions of ISMIR conference (2020 and 2021) as fully remote online-only events and the changing global landscape as a result of the COVID-19 pandemic, ISMIR 2022 was proposed to be the first hybrid ISMIR conference, with both in-person and remote attendees and presenters. While this posed unique challenges in uncertain and rapidly evolving circumstances, we took this as an opportunity to bring back the benefits of a physical conference, while maintaining the expanded reach and improved inclusivity that the past two online editions of the conference had provided.

Similar to past editions, ISMIR 2022 was organized as a single track conference and comprised a technical program of submitted research papers, tutorials, keynote and plenary talks by eminent speakers in MIR and related areas such as musicology and music cognition. A number of special sessions were planned on themes that are topical to both academia and industry. Further, satellite events (such as workshops) that aimed to facilitate and increase interdisciplinary dialogue between Music Information Science and Humanities were planned for the days around the conference. The varied themes of these workshops included Music and Health, Music Culture and Identity, Music and Movement, Music Perception, and Neuromusicology.

The main conference started with a day of tutorials (Sunday), followed by keynotes, paper presentations and special sessions over the next four days (Monday–Thursday), concluding with a late-breaking/demo session. Social events included the welcome reception on Monday evening, a music concert on Tuesday evening, a conference banquet on Wednesday evening, and an informal music jam session on Thursday evening. Satellite events were organized in the week prior and after the main conference.

This report summarizes the perspective of the organizing team of ISMIR 2022, where we present the highlights of the hybrid conference with some of our experiences and learnings from the organization of the conference. In the remainder of the sections, we first describe the considerations and the design of the hybrid conference format used in ISMIR 2022, followed by a summary of the conference program. We then present some statistics around conference attendance, participation and engagement, following up with some of our thoughts and reflections. Given ISMIR 2022 is the first ISMIR conference to be held in a hybrid format, we believe that our learnings would be useful for future organizers of hybrid conferences in general and ISMIR conferences in particular.

2 Hybrid Conference Format and Considerations

ISMIR 2022 was the first hybrid ISMIR conference and the organizing team put in considerable thought to design the hybrid format of the conference, continually seeking feedback and actively engaging the ISMIR board and the community in general. We outline some of those considerations and the design process here.

2.1 Organizational Considerations

Following the tenets of ISMIR community and past conference editions, the hybrid format for ISMIR 2022 had the following main considerations:

- ISMIR 2020 and ISMIR 2021 were both virtual (online), but provided very good accessibility to the conference, increasing the attendance at the conference significantly. We wished to continue to make the conference accessible to a large community and improve the reach of the conference.
- Hybrid conferences are still new and challenging for both organizers and attendees, especially for remote participants. Further, given the rapidly evolving COVID-19 pandemic related global travel restrictions, we wished to support the ISMIR community by providing as much flexibility as possible to conference participants to present their work and attend the conference. From a local organizer perspective, the uncertainties associated with a hybrid conference implied that we needed to adopt agility in planning and continuously involve the community and experts to design a sustainable hybrid format for the conference in 2022 and future years.
- The hybrid format is expected to be a preferred format for the next few years, continuing to include a significant online component in each edition. Multiple technology tools that allow us to host an online conference with remote participants are available, but the tools have not yet been integrated well to provide a seamless experience for remote participants. Furthermore, the technology platforms on which the online components of the conference are hosted are still evolving, and often are based on proprietary solutions involving costly maintenance. To address these needs, we wished to build a sustainable and reusable technology platform to host the virtual part of the conference, and include technology needs within the design of the hybrid format. Given the emphasis on open research and tools in ISMIR, we wished to use open source tools for this purpose and make them publicly available for future use.
- In alignment with the ISMIR board's multiple diversity and inclusion initiatives, we wished to continue to work towards improving diversity at the conference. We further wished to showcase India's diverse musical and cultural heritage in both scientific and social programs, and help to grow and support a sustainable community to drive MIR research in India.

2.2 Designing the Hybrid Format

ISMIR 2022 took place in a hybrid format with a mix of in-person and remote presenters and attendees. At the outset, based on the tenets and considerations of a hybrid ISMIR conference, we built an International organizing team that was composed of members of the ISMIR community from around the world. The intentional involvement of multiple remote members into conference organization helped to design the hybrid format effectively considering multiple perspectives, while also taking advantage of the fact that organization of remote components of the conference did not need on-site teams, freeing up on-site teams to focus on physical organization needs.

Similar to previous editions, the entire conference (apart from the tutorials) was single-track and all the scientific program sessions in the schedule were live broadcast. Thus the hybrid event was conducted with a combination of live sessions at the venue combined with a virtual platform. The designed format intended to give all attendees an opportunity to interact with all presenting authors. Note however that because of time zone differences, not all interactions could be synchronous.

To provide the flexibility to participants to attend the conference remotely or in-person, but at the same time ensure the conference budgeting is appropriate and sustainable, ISMIR 2022

introduced author registrations and a two-tier registration fee based on mode of attendance. All presenting authors registered for the conference as in-person and could choose/change their mode of attendance later. All other participants could choose a registration type based on their mode of attendance (in-person or remote). Remote participants paid a reduced fee. Student registrants also paid a reduced registration fee. The flexibility allowed participants to choose their mode of attendance based on evolving circumstances and travel restrictions.

Inclusivity in Hybrid Format: Given that the conference was hybrid with a large fraction of registered participants attending the conference remotely, the conference aimed to be inclusive to all participants, especially to remote attendees. Whenever possible during the live streamed sessions, questions/comments were first solicited from the remote attendees to compensate for the absence of the opportunity to interact with the speakers outside the session. Our participants were sensitized about remote attendees' time zone differences while engaging with them via asynchronous interaction. The existing ISMIR conference code of conduct was extended in its applicability to the hybrid format[1].

Technology Tools and Virtual Platform: The virtual platform of the conference was developed with the following primary goals - (1) provide a seamless experience for attendees before, during and after the conference, and (2) make the virtual conference platform open, sustainable and future proof, while reducing effort needed for future maintenance and archival. The virtual conference platform for ISMIR 2022 consisted of a combination of Slack, Zoom and MiniConf. All registered participants including in-person participants had full access to the virtual platform.

MiniConf, a publicly available archive of the entire conference program, helped put together and navigate through the schedule, papers, tutorials and information about all sessions. The conference Slack workspace served as the primary tool for interaction between participants. The workspace was also available for a week before to two weeks after the conference to facilitate any interactions between participants outside conference dates. The Slack workspace supported asynchronous interactions between participants as well as group huddles. All information that should be available only with registered participants was shared on the Slack workspace for a restricted reach. The conference sessions were livestreamed on Zoom. We used Zoom meetings in the conference, which ensured two-way communication was possible and allowed remote participants to interact (on video with audio) with the live audience.

The MiniConf archive for ISMIR 2022 is a modified version of the open source MiniConf platform[2] and has been made available for future editions of the conference. The virtual platform design has been documented and developed in collaboration with the technology volunteer team of the ISMIR board for continued development. The platform uses standard tools and familiar UI/UX elements for seamless and familiar access for ISMIR conference participants over the next few years.

Recording and Archival: All sessions of the scientific program (tutorials, paper presentations, keynotes, plenary sessions, opening, closing sessions and ISMIR music program) were recorded and made available on conference Slack for offline viewing after the corresponding session. The

[1]ISMIR 2022 Conference Code of Conduct: https://ismir2022.ismir.net/codeofconduct
[2]MiniConf: https://www.mini-conf.org/

recordings were available to registered conference participants for two weeks post the conference. MiniConf continues to be available and maintained after the conference and serves as the official archive of the conference[3]. The repositories of ISMIR 2022 conference platform[4], conference website[5] and conference proceedings are hosted on GitHub and are openly available.

Tutorials: Tutorial sessions were hybrid, with some attendees and speakers present at the venue and remaining remote. The tutorial sessions were slightly longer in duration this year to allow for more interaction given the hybrid mode.

Paper Sessions: Each paper session started with a sequence of 4-minute live presentations (or presentation video playback for remote presenters) of all the papers assigned to that session. This ensured that each paper of the conference was assigned a dedicated slot for presentation. Following this activity, in-person attendees physically visited all the posters set up by the in-person presenters in the poster area. The posters were displayed on poster boards with the presenters available for immediate interaction. Posters by remote presenters were displayed on a screen in the poster venue (as a rotating slideshow). All paper and poster PDFs, as well as presentation video (4 min), irrespective of whether the presenters were in-person or remote, were available online on the conference virtual platform MiniConf. Each paper had a dedicated Slack channel, and the interaction with remote presenters was meant to be asynchronous via the corresponding paper's Slack channel. Efforts were made to remind the in-person participants to interact with remote presenters asynchronously through the corresponding Slack channel.

Keynotes, Plenary and Special Sessions: Both keynote talks were presented in-person from the conference venue and live-streamed. The plenary sessions were panels in hybrid mode with some speakers remote and others physically present at the venue. Physical attendees could interact directly while remote attendees could watch the live stream and interact with the speakers in the provided Zoom meeting room format.

Online Special Sessions: These special sessions were fully online and interactive. The meeting links were announced on Slack to all registered attendees. All the conference participants were encouraged to join the sessions and participate in discussions.

ISMIR Music Program: Some of the pieces of the ISMIR music program were presented live at the venue, while the remaining ones were a playback of a pre-recorded video. The complete session was live-streamed and also recorded for offline watching for participants.

Late-breaking/Demo (LBD) Session: The Late-breaking/Demo (LBD) session in ISMIR conferences is a forum for sharing prototype systems, initial concepts, and early results which may have not yet fully matured but are of interest to the MIR community. It is also a great entry point for people who are new to ISMIR to showcase their preliminary work and receive early feedback from fellow researchers. Attendees of the LBD session could interact with demos or discuss their thoughts on the latest developments in the field. LBD session has been a mainstay for several past ISMIR conference editions, but were modified in ISMIR 2022 to suit a hybrid format.

[3] https://ismir2022program.ismir.net/
[4] https://github.com/ismir2022program/ismir2022program.github.io
[5] https://github.com/ismir2022/ismir2022.github.io

LBD presentations were split into a physical session and an online session. Each LBD extended abstract had a dedicated Slack channel on the virtual platform with the abstract and poster/video posted on MiniConf. Both in-person and remote attendees could ask asynchronous questions to remote or in-person presenters via the Slack channel. The LBD posters by in-person attendees were presented at the LBD session at the venue. Remote presenters used the huddle feature on the respective Slack channels to present their LBD posters on a video call.

Social Program: The cultural and music events performed at the conference venue were not live-streamed, however the concert and puppet theater events were recorded and made available for offline viewing of conference participants.

The hybrid format of the conference described above is expected to serve as a starting template for future ISMIR conference editions, with clearly documented processes and tools available to bootstrap and set up a streamlined virtual platform for conference attendees.

3 Conference Program

We summarize the scientific and social program that was part of the conference, providing a short description of the different sessions. The proceedings of the conference [Rao et al., 2022] are archived on DBLP and Zenodo. Both the individual papers and the complete proceedings can be accessed online[6].

3.1 Papers

The core of the ISMIR 2022 Scientific Program is the 113 papers that were presented during the conference. A total of 305 abstracts were registered, of which 264 were submitted as full papers eligible for review. In keeping with the practices of the previous years, a two-tier double-blind review process was conducted involving a total of 241 reviewers and 64 meta-reviewers.

In order to promote the study of music traditions that are still under-represented in MIR, there was a Special Call for Papers on "Cultural and Social Diversity in MIR," continuing the spirit of ISMIR 2021's Special Call for Papers on "Cultural Diversity in MIR." The submissions to the Special Call underwent the same review process as the papers in the main track, with the same number of reviews and a similar number of bids per submission, and with meta-reviewers who were carefully chosen to oversee the review process. In all, 41 papers were submitted to this call, of which 14 were accepted.

3.2 Tutorials

The ISMIR 2022 conference program consisted of six tutorials, presented in a hybrid format. There were three parallel tutorials each in the morning and the afternoon sessions on the following topics:

- An Introduction to Symbolic Music Processing in Python with Partitura
- Computational Methods for Supporting Corpus-Based Research on Indian Art Music
- Designing Controllable Synthesis System for Musical Signals

[6] https://dblp.org/db/conf/ismir/ismir2022.html

- Few-Shot and Zero-Shot Learning for Musical Audio
- Deep learning for Automatic Mixing
- Trustworthy MIR: Creating MIR applications with values

3.3 Keynotes

ISMIR conference keynotes are traditionally talks by invited experts in areas and topics allied to MIR. It enables the community to learn more from external speakers and learn about new areas, tools, technologies and research problems that help extend our understanding of the field. ISMIR 2022 comprised two keynotes titled:

- "**Evolution of Performance and Aesthetics in Indian Art Music**", by T M Krishna (Karnatik Musician, Author & Activist)
- "**Adventures of AI: Deepfake and Bias in Audio Processing**", by Richa Singh (Professor and Head, Dept. of Computer Science and Engineering, Indian Institute of Technology Jodhpur, India)

3.4 Special Sessions

To complement the regular scientific program there were six special sessions, organized as panel discussions, aimed at covering various trending topics of relevance to the ISMIR community. Two of the sessions had a hybrid format and three were fully online:

- Enhancing music listening with MIR (hybrid)
- Enhancing music creativity with MIR (hybrid)
- Ethics and MIR (online)
- PhD in MIR: Challenges and Opportunities (Online)
- TISMIR: the open journal of the ISMIR society (Online)

3.5 Music

ISMIR conferences typically include a music program that compiles a set of music pieces submitted to the conference. The idea of the music program in 2022 was to bring together composers, technologists and performers, demonstrating application of music information retrieval, computational musicology, human computer interaction, machine accompaniment, call-response, or ethical hacking. In line with the cultural and social diversity theme of the conference, submissions on non-Eurogenetic music that could present cultural diversity were also encouraged. The submissions were evaluated on the basis of audio-visual presentation, submission statement, concept clarity while capturing and retaining audience attention. ISMIR 2022 music session comprised 13 music pieces, and was organized as a session open to the public as a part of outreach to the local community to encourage more submissions in future ISMIR editions.

3.6 WiMIR Session

Women in Music Information Retrieval (WiMIR) is a group of people dedicated to promoting the role of, and increasing opportunities for, women in the MIR field. WiMIR has a significant presence in each ISMIR conference, helping to plan and organize different diversity and inclusion initiatives during the conference. The WiMIR plenary session of ISMIR 2022 was a hybrid session, featuring a panel of four women researchers across academia and industry who were invited to motivate the audience about their recent topic of research, while sharing the associated challenges in their journey and valuable insights from their experience. The session also featured an interactive conversation with the audience.

3.7 Industry Presentations

With MIR technology playing a prominent role in the present-day industry, we had ISMIR 2022 sponsors making brief presentations about their company profile, the nature of their R&D and the opportunities available to students interested in the field. The participating sponsors were: Spotify, Moises, Adobe, Deezer, Utopia music, Pandora, Smule, Yamaha, and Chordify. Apart from this, the conference venue had exhibit booths for sponsors which made for interesting interactions during the lunch and coffee breaks.

3.8 Late-Breaking/Demo (LBD)

The Late-Breaking/Demo (LBD) session was organized in a hybrid format this year with both local and remote sessions. A light screening process was carried out for each submission by the LBD chairs. To clearly distinguish LBD extended abstracts from main conference papers, a new watermark was introduced on the abstract template. As a part of conference outreach, the chairs reached out to groups working on Indian music inviting submissions. A special feature introduced this year was to make the local LBD session an open session for students and independent researchers from the local community, allowing them to attend the event for free. This enabled participants to interact with students, experts and senior members of the ISMIR research community and be introduced to the community in general. Also on display, during the LBD session, were electronic instruments (such as tanpura and veena) by Radel, a prominent Indian electronic instruments manufacturer.

3.9 Social Program

Given that the conference returned to a hybrid format after two online editions, the social program was planned to encourage in-person interactions among the seasoned and new ISMIR participants after a hiatus due to the pandemic, as well as to showcase the rich music and cultural heritage of India. The ISMIR 2022 welcome reception included a performance of Kalidasa's play **Mālavikāgnimitram** by Dhaatu, which is a leading Puppet Theater in India based out of Bengaluru[7]. Following the show, a street-food themed dinner buffet showcased a variety of culinary

[7] https://ismir2022.ismir.net/program/social/dhaatu/

offerings from across the length and breadth of India. Trivia games organized by the social program chairs added to the excitement and camaraderie.

The ISMIR 2022 Music Concert featured a Jugalbandi vocal Indian art music concert[8] by Kaustuv Kanti Ganguli and Vignesh Ishwar. The jugalbandi concert showcased the commonalities, differences and nuances of Hindustani and Carnatic music, the two predominant art music traditions of India. Kaustuv Kanti Ganguli was accompanied by Ravindra Katoti on the harmonium and Tejovrush Joshi on the tabla. Vignesh Ishwar was accompanied by Sayee Rakshith on the violin and Sumesh Narayanan on the mridangam.

The ISMIR 2022 banquet was held at Rangoli Gardens, which is an open-air museum that showcases a model village capturing Karnataka's distinct rural life in all its quaint glory. The museum is a fascinating and close-to-realistic sculptural journey into the economy, food habits, cultural traditions, religious events, recreations, and living conditions of Karnataka. The banquet itself featured the traditional cuisine of the four southern states of India making the entire experience interesting and edifying for the conference participants.

No ISMIR conference is complete without the informal jam session during the conference. True to this custom, a jam session was organized at a venue distant from the conference venue with to and fro transport arranged for the 40+ very enthusiastic participants (who are also musicians!) who made a memorable evening out of it.

3.10 Satellite Events

In addition to the main conference, five satellite events of ISMIR 2022 were available to participants:

1. **WiMIR workshop**: The WiMIR Workshop comprised two days of talks by eminent researchers in the WiMIR community, and an opportunity to network, socialize, and have discussions with peers ahead of the ISMIR conference[9].
2. **Music, Mind, Movement and Technology (MMMT) workshop**: The MMMT hybrid satellite workshop was an attempt to increase the dialogue between the fields of Music Information Retrieval and Music Cognition. This hybrid two-day workshop on 2–3 December, 2022 brought together leading international researchers for a series of talks highlighting interdisciplinary research and facilitating interaction and exchange of ideas around various themes[10].
3. **Indian Music Experience**: As a satellite event for ISMIR 2022, we organized an Indian music experience workshop on 09 December, 2022. The day-long physical-only workshop was hosted at the Indian Music Experience Museum (IME), which is India's first interactive music museum and involved a museum visit, workshops on Indian art music and a music exhibition[11].
4. **Music HackDay India:** The Music Tech Community India is an open community of musicians, developers, researchers and artists with an aim to collaborate, share knowledge and bridge the gap between media, arts and technology as a community. As a satellite event

[8] https://ismir2022.ismir.net/program/social
[9] https://wimir.wordpress.com/2022/08/03/wimir-workshop-2022/
[10] https://ismir2022.ismir.net/satellites/mmmt
[11] https://ismir2022.ismir.net/satellites/ime

of ISMIR 2022, the community organized a two-day MusicHackDay India 2022 event on 10–11 December, 2022 that included a hackathon, algorave concert, networking, and panel discussions[12].

5. **CompMusic workshop:** CompMusic Workshop 2022 was a 5-day workshop organized from 12–16 December, 2022 at the Indian Institute of Technology Madras, Chennai as a satellite event of ISMIR 2022 to introduce the field of Computational Musicology while focusing on the study of Carnatic Music. By combining theoretical lectures with hands-on labs, the workshop was aimed at giving the participants the conceptual framework and practical tools needed to analyze and understand music signals using a variety of computational methodologies[13].

4 Conference Attendance, Participation and Engagement

This section provides an overview of the conference attendance and some statistics about the participation and engagement. We first start by addressing the diversity and inclusion initiatives that aimed to help improve conference participation and engagement.

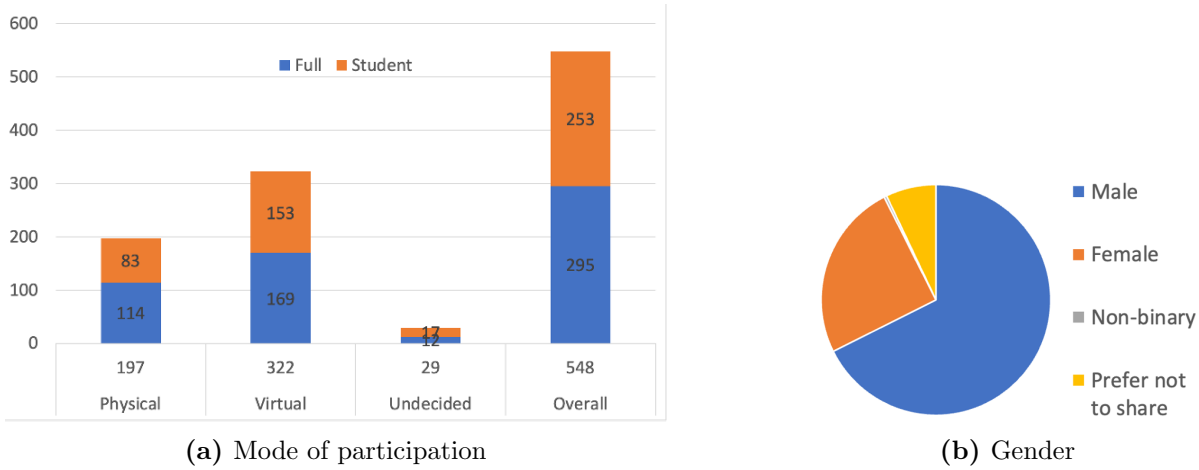
4.1 Diversity, Inclusion and Outreach

The ISMIR 2022 conference took a broad view of Diversity and Inclusion (D&I). Under the leadership of the conference D&I chairs, in collaboration with the organizing team at large, ISMIR 2022 offered a variety of initiatives intended to make the conference a positive, welcoming, and supportive environment for a diverse range of presenters and attendees. The initiatives under ISMIR 2022 D&I included:

1. A pilot New-to-ISMIR paper mentoring program which was designed for members new to the ISMIR community (early-stage researchers, researchers from areas underrepresented in ISMIR, and/or researchers from other allied fields who wish to submit their work to ISMIR conference) to share their advanced-stage work-in-progress ISMIR paper drafts with senior members of the ISMIR community (mentors who volunteered for the program) to obtain focused reviews and constructive feedback. The feedback could then be used to revise the draft and submit it to the conference, to go through the standard review process. There was an enthusiastic 30 mentee sign-up in the pilot program, from whom 15 papers were mentored, leading to 10 of those submitted to ISMIR 2022 and two of the submitted papers accepted in ISMIR 2022.
2. As a part of commitments to foster D&I and to support early-stage researchers, the ISMIR society, WiMIR, local organizers provided financial support in terms of registration waivers enabled by the generous support of the sponsors. Partial or full waivers were extended to all applicants for both in-person and remote participation. A total of over 75 grants were provided under different categories such as author grants, WiMIR grants and volunteer grants.

[12] https://musichackdayindia.github.io/

[13] https://compmusic.upf.edu/workshop-ismir-2022



(a) Mode of participation **(b)** Gender

Figure 1. Registered participants at ISMIR 2022: Mode of attendance and gender distribution

3. A WiMIR plenary session of ISMIR 2022, that invited a panel of four women researchers who are exploring new frontiers and themes in music research, to motivate the audience on their recent research topic, share the challenges and insights and have an interactive session with the audience
4. ISMIR 2022 was made accessible to the local community through open sessions, welcoming the local community to register for free and participate in select sessions.

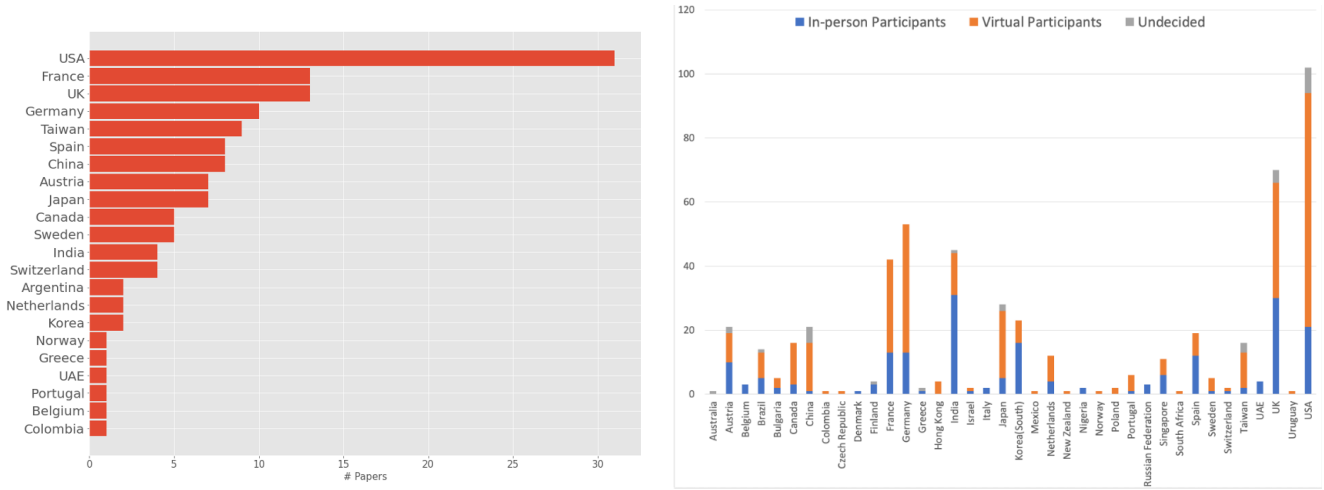
4.2 ISMIR 2022 in numbers and charts

We present some charts and numbers that provide an overview of attendees and participation in the conference. Please note that some of these data points were collected on a voluntary basis and hence might not be comprehensive. Adhering to the code of conduct of the conference, all the numbers reported here are aggregates and no personal identifying information will be reported.

The 113 papers accepted to the conference were contributed by a total of 423 authors (3.8 authors on average per paper) - of them 355 were unique authors. Authors from over 26 different nationalities contributed papers to ISMIR 2022, as seen from Figure 2. Each paper received reviews from at least 3 reviewers and a single meta-reviewer (hence at least 4 reviews per paper). Average reviewer was responsible for reviewing 3.4 papers.

The conference had a total of 548 registered participants, of which 246 attended at least one tutorial. Of the 548 participants, 253 were students and 295 were non-student registrations. Further, of these 548 participants, 150 were from the industry and the rest 398 were from academia. A more granular grouping of participants based on their mode of attendance shows that there were 197 in-person registrations and 322 remote registrations, with around 29 participants undecided on their mode of attendance by Day-1 of the conference as seen in Figure 1. The figure also shows the gender distribution of the participants. Of the 197 in-person registrants, over 180 participants attended the conference in-person in Bengaluru, India. ISMIR 2022 had participants spanning 36 nationalities (based on their affiliation), as seen from Figure 2.

The conference virtual platform was fully accessible by all participants (in-person and remote) from about a week before the conference till two weeks after the conference. The Slack conference



(a) Paper authors **(b)** Registered participants

Figure 2. Authors and Participants at ISMIR 2022: Distribution based on nationality

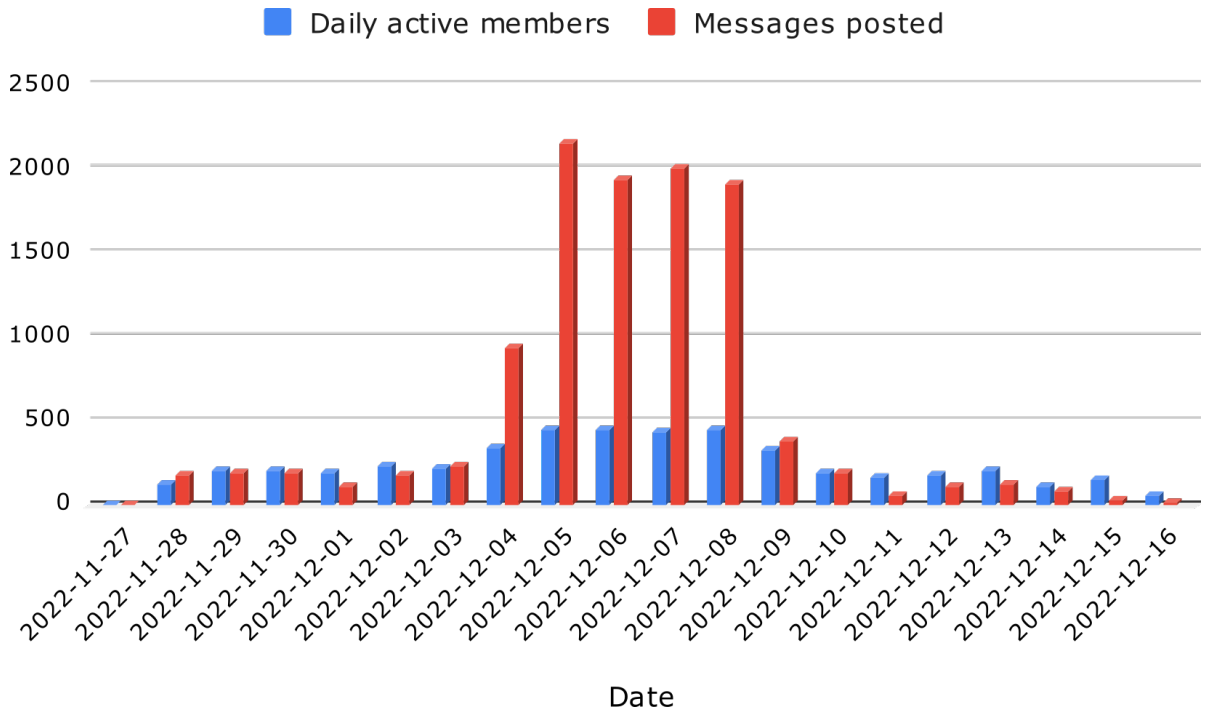


Figure 3. Participation and engagement on Slack during the conference

workspace had over 200 channels including an active social channel. For each day in the duration between 27 Nov - 16 Dec, 2022, as proxy metrics of engagement during the conference, we report the number of active members on the conference virtual platform (Slack) and the number of messages posted to different channels in Figure 3. Among the registered participants, we saw over 450 active participants during the conference days (04-08 Dec, 2022), while around 150 participants continued to stay active and interact with the community up to a week after the conference. The figure also shows that around 2000 messages a day were exchanged between participants during the days of the conference. However, the distribution of messages showed a long tailed distribution with the top 10% of the active members contributing with over 60% of the nearly 10,000 total messages exchanged, while the bottom 25% sent no messages on the platform. The channels associated with each paper were visited by an average of 15 unique participants (including the author), while the social channel received over 500 unique participant visits.

5 Reflections and Summary

We summarize some of our reflections from the conference based on anecdotes, quantitative data and our experience organizing the event.

New in ISMIR 2022: The organizing team designed several new elements in hybrid ISMIR 2022. The continued tradition of inviting Keynote speakers from allied areas was well received, and provided the community with additional perspectives beyond common MIR areas of work. The format of paper sessions ensured that each paper got a dedicated slot to present, which is a possibility within a single track conference. The pilot New-to-ISMIR paper mentoring program was welcomed enthusiastically by the community and is likely going to be a mainstay of D&I initiatives of future ISMIR conferences. The open LBD sessions provided a glimpse of MIR related work to the external community who could not participate in the whole conference due to the cost and time involved. The social program was one of the major highlights of the conference, and the choice and spread of the events was highly appreciated and well received. The varied satellite events, especially the Indian Music Experience workshop provided unique opportunities to the community to explore facets of computational analysis of Indian art music and other allied fields of MIR.

Hybrid format: The hybrid format of the conference is likely to continue for a few more years given the inclusive nature of it and the significant reach it provides to the community. However, some challenges continue to exist due to the distributed nature of the hybrid conference that allows for both in-person and remote participation. The lack of geographical co-location and differences in time zones are not problems that can be overcome, but we can mitigate their impact, especially for remote attendees. The inclusive hybrid format of the conference ensured we provided as seamless an experience for remote and in-person participants as possible. However, engagement of remote attendees continues to be a major challenge despite the availability of technology tools. Anecdotal evidence from participants indicated that the conference would benefit greatly if all the authors of the papers and presenters are present in-person, while remote participation is limited to attendees only. This ensures that authors and presenters are available for a fixed time at the conference and engage better, increasing the possibility of interactions. Despite these observations,

we anticipate that the possibility of remote participation at conferences will continue to be provided because the advantages of the improved reach and accessibility outweigh the concerns about lack of engagement.

Continuity: The tools and technology platform built for ISMIR 2022 were built with openly available tools to be sustainable and well documented to make it easy to set up. This is expected to provide an easy way to bootstrap the technology platform in future ISMIR conference editions by building on existing tools and processes. The ISMIR board also has a technology volunteer team to provide a roadmap and sustainably transition technology tools across editions of the conference.

Indian presence at ISMIR 2022: India has a small but significant MIR presence. While the number of Indian participants at the conference was relatively small due to the small-sized research community in the country as well the costs involved, we ensured we provided all necessary opportunities for students to volunteer for the conference and benefit from their interaction with the community. There was significant Indian participation in the satellite events and the LBD sessions. We disseminated the event throughout the country to raise awareness and provide visibility to the conference. We plan to build on the impetus provided to MIR in India after ISMIR 2022 by organizing distinguished lectures, winter/summer schools on MIR on a regular basis to encourage further growth. We will continue to engage musicians, music listeners, musicologists, neuro-scientists and music technologists, and bring them together to establish multi-disciplinary collaborations and build a sustainable MIR community in India. We propose to organize multiple events to involve local communities and enhance our outreach activities, with the aim of bringing in greater engagement and integration of the Indian community with ISMIR.

On the whole, ISMIR 2022 was a successful event and was well received by both in-person and remote attendees. We do hope that the ISMIR conference will return to India in the future, while growing in its reach and topics to include more music traditions around the world and more interdisciplinary collaborations between the diverse communities involved. ISMIR 2023 is planned to be organized in Milan, Italy from November 05–09, 2023 [14].

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ISMIR 2022 organizing team: https://ismir2022.ismir.net/team

[14] https://ismir2023.ismir.net/

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