

# Preface

Welcome to ISMIR 2021, the 22nd International Society for Music Information Retrieval Conference. ISMIR is the world's leading research forum on processing, searching, organizing, and accessing music-related data. Our community reflects a diversity of scientific disciplines, seniority levels, professional affiliations, and cultural backgrounds. Our goal is in fostering and stimulating this diversity, leading to better science and better music services. Due to the COVID-19 pandemic, the 22nd ISMIR conference became the second ISMIR to be fully virtual. While this posed unique challenges, we also took this as an opportunity to expand the reach of ISMIR and improve the inclusivity of the conference. The organizing team, who came together from all over the world to ensure the success of this event, welcomes you to ISMIR 2021.

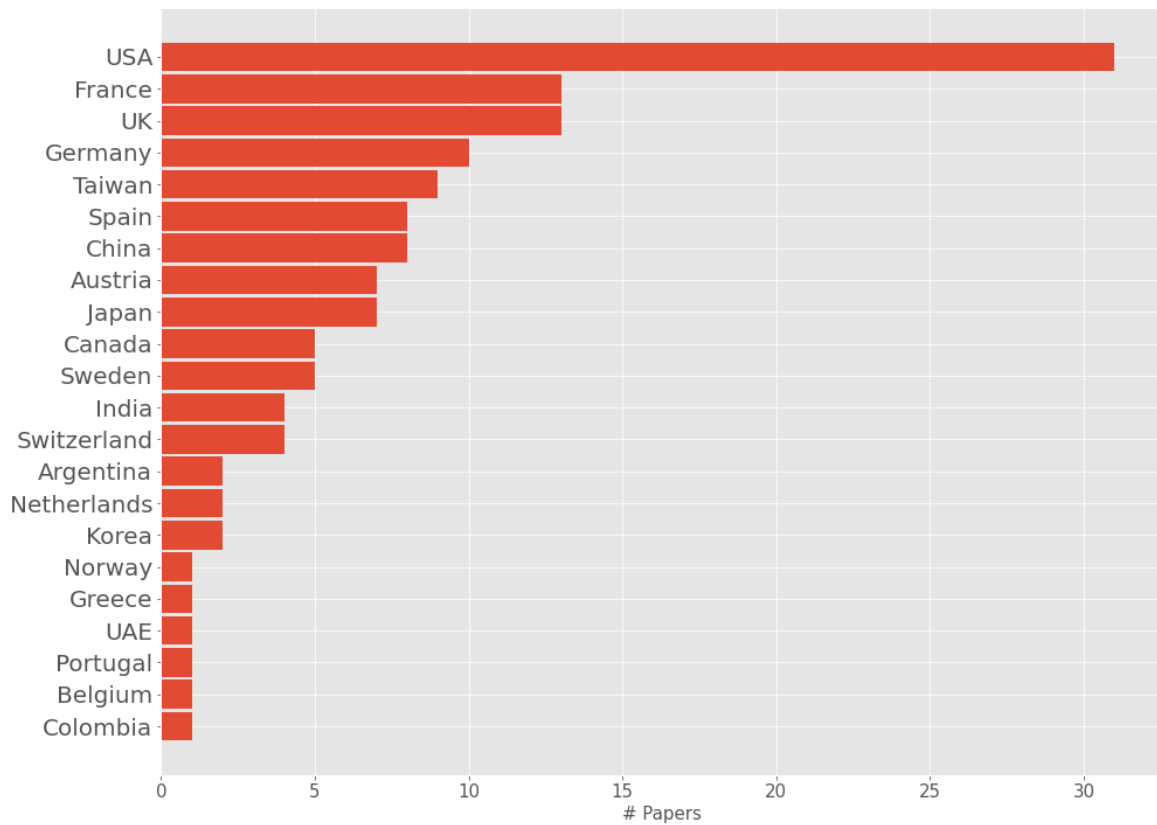
## I. Scientific Program

ISMIR 2021 Scientific Program comprised two Keynote talks, one WiMIR Keynote talk, 6 tutorials and 104 papers. A total of 278 abstracts were registered of which 258 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 298 reviewers and 81 meta-reviewers. Each paper was assigned to a single meta-reviewer and 4 reviewers, to ensure that each would eventually receive at least 3 completed reviews, accounting for the foreseen limited availability of some reviewers. Meta-reviewers were also instructed to complete a full review of each of their assigned papers, in addition to the final meta-review summarizing the individual reviews. Each meta-reviewer was responsible for between 2 and 5 papers, and each reviewer was responsible for no more than 4 papers. The initial reviewing phase was followed by a discussion period, in which reviewers and meta-reviewers could discuss and revise their assessments of each paper. Meta-reviewers were then instructed to summarize the discussion and reviews in the final report. The Scientific Program Chairs (SPC) finally rendered decisions on each paper. The SPC would like to express their thanks to the ISMIR community of reviewers for their wholehearted support to this critical aspect of a successful ISMIR technical program.

Table 1 summarizes the submitted papers by subject area together with the corresponding accepted proportion. Figure 1 illustrates the number of papers accepted with at least one contributing author from each region. Geographic affiliations were inferred from self-reported author affiliations and email addresses. Finally, Table 2 summarizes the publication statistics over the 22-year-history of the conference.

**Table 1:** Papers submitted and accepted by subject area

Subject Area	Submitted	Accepted	Accept %
Applications	25	7	28
Domain knowledge	53	19	36
Evaluation, datasets and reproducibility	18	10	55
Human-centered MIR	13	7	54
MIR fundamentals and methodology	14	4	28
MIR tasks	88	29	33
Musical features and properties	43	26	60
Philosophical and ethical discussions	4	2	50
<b>Total</b>	<b>258</b>	<b>104</b>	<b>40.3</b>



**Figure 1:** Number of papers accepted with at least one contributing author from each region

**Table 2:** Summary of publication statistics over the 22-year-history of the ISMIR conference

Year	Location	Oral	Poster	Total	Authors	Unique Authors	Authors / Paper	Unique Authors / Paper
2000	Plymouth	19	16	35	68	63	1.9	1.8
2001	Indiana	25	16	41	100	86	2.4	2.1
2002	Paris	35	22	57	129	117	2.3	2.1
2003	Baltimore	26	24	50	132	111	2.6	2.2
2004	Barcelona	61	44	105	252	214	2.4	2.0
2005	London	57	57	114	316	233	2.8	2.0
2006	Victoria	59	36	95	246	198	2.6	2.1
2007	Vienna	62	65	127	361	267	2.8	2.1
2008	Philadelphia	24	105	105	296	253	2.8	2.4
2009	Kobe	38	85	123	375	292	3.0	2.4
2010	Utrecht	24	86	110	314	263	2.0	2.4
2011	Miami	36	97	133	395	322	3.0	2.4

2012	Porto	36	65	101	324	264	3.2	2.6
2013	Curitiba	31	67	98	395	236	3.0	2.4
2014	Taipei	33	73	106	343	271	3.2	2.6
2015	Málaga	24	90	114	370	296	3.2	2.6
2016	New York	25	88	113	341	270	3.0	2.4
2017	Suzhou	24	73	97	324	248	3.3	2.6
2018	Paris	104			337	265	3.2	2.5
2019	Delft	114			390	315	3.4	2.8
2020	Montréal / Virtual	115			426	343	3.7	3.0
2021	Virtual	104			334	269	3.2	2.6

## Special Call for Papers: Cultural Diversity in MIR

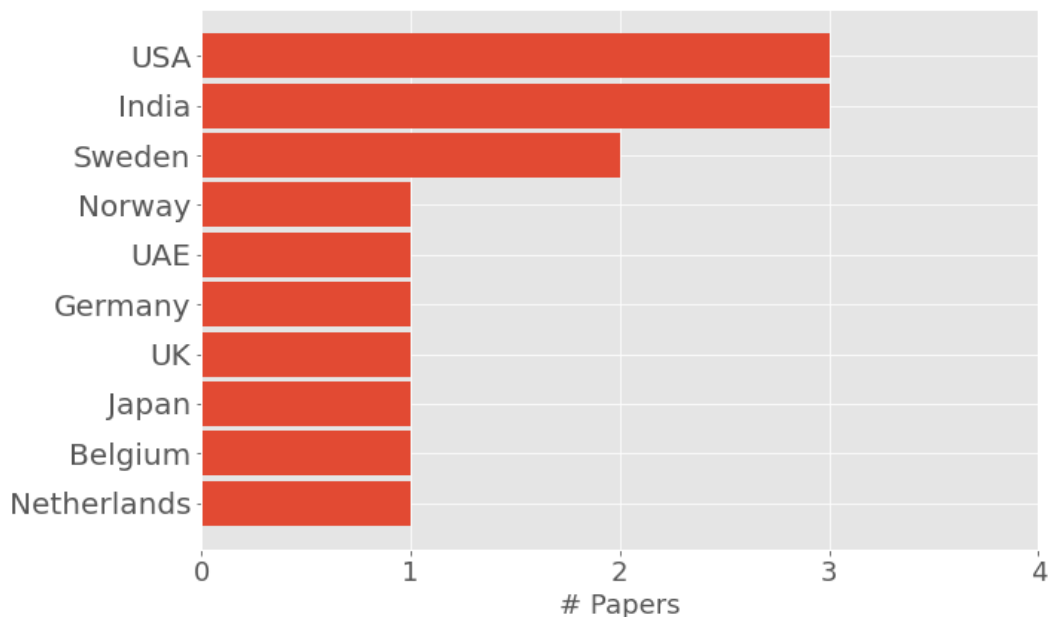
Music is often considered a universal language, yet different cultures have created diverse music traditions and colorful artifacts. This year, the conference organizers wanted to promote the cultural diversity of the ISMIR community and its research. To this end, the ISMIR2021 Call for Papers included a special call for papers on “Cultural Diversity in MIR”. This year's Scientific Program Chairs – Zhiyao Duan (University of Rochester, USA), Juhan Nam (KAIST, South Korea), Preeti Rao (IIT Bombay, India), and Peter van Kranenburg (Meertens Institute, The Netherlands) – organized the call with a focus on the twin topics of non-Western music and cross-cultural studies. To submit to this call, authors had expressed their intent during submission.

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, 44 papers were submitted to this call, of which 11 were accepted and verified by the SPC to match the topics of the call. An additional 3 papers were also accepted to the main track as they were verified by the SPC not to match the special call. Table 3 shows the distribution of submitted papers across subject areas together with the proportion of accepted papers in each for this special call.

**Table 3:** Special Call for Papers on “Cultural Diversity in MIR”: Papers submitted and accepted by subject area

Subject Area	Submitted	Accepted	Accept %
Applications	3	0	0
Domain Knowledge	12	3	25
Evaluation, datasets and reproducibility	2	1	50
Human-centered MIR	1	0	0
MIR tasks	14	2	14
Musical features and properties	7	3	43
Philosophical and ethical discussions	2	2	100
<b>Total</b>	<b>41</b>	<b>11</b>	<b>26.8</b>

Figure 2 depicts the number of Special Call papers accepted with at least one contributing author from each of the specified regions of the world. The geographic affiliations were inferred from self-reported author affiliations and email addresses. We note a wide representation of countries with at least a few international collaborations.



**Figure 2:** Number of papers in the special call accepted with at least one contributing author from each region

## Best Paper Awards

Best paper candidates were selected from the 104 accepted papers. The SPC first short-listed 15 papers based on reviewers' and meta-reviewers' nominations as well as the paper review scores. Of these, the SPC nominated 8 paper candidates under three categories: the Best Paper (3 candidates), the Best Student Paper (3 candidates) and the Best Special Call Paper (2 candidates), based on their own judgement of the paper attributes as well as the detailed reviewer comments.

### Best Paper Award Nominations

Filip Korzeniowski, Sergio Oramas, and Fabien Gouyon, Artist Similarity Using Graph Neural Networks

Hugo F. Flores Garcia, Aldo Aguilar, Ethan Manilow, and Bryan Pardo, Leveraging Hierarchical Structures for Few-Shot Musical Instrument Recognition

Rodrigo Castellon, Chris Donahue, and Percy Liang, Codified Audio Language Modeling Learns Useful Representations for Music Information Retrieval

### Best Student Paper Award Nominations

Minz Won, Justin Salamon, Nicholas J. Bryan, Gautham Mysore, and Xavier Serra, Emotion Embedding Spaces for Matching Music to Stories

Daniel Yang and Timothy Tsai, Composer Classification with Cross-Modal Transfer Learning and Musically-Informed Augmentation

Harin Lee, Frank Höger, Marc Schönwiesner, Minsu Park, and Nori Jacoby, Cross-cultural Mood Perception in Pop Songs and its Alignment with Mood Detection Algorithms

### **Best Special Call Paper Award Nominations**

Rujing Huang, Bob L. T. Sturm, Andre Holzapfel, De-centering the West: East Asian Philosophies and the Ethics of Applying Artificial Intelligence to Music

Rohit M A, Amitrajit Bhattacharjee, Preeti Rao, Four-way Classification of Tabla Strokes with Models Adapted from Automatic Drum Transcription

The final selections were made by specially appointed judges drawn from experienced researchers for each category. The following papers received awards:

### **Best Paper Award**

Hugo F. Flores Garcia, Aldo Aguilar, Ethan Manilow, and Bryan Pardo, Leveraging Hierarchical Structures for Few-Shot Musical Instrument Recognition

### **Best Student Paper Award**

Minz Won, Justin Salamon, Nicholas J. Bryan, Gautham Mysore, and Xavier Serra, Emotion Embedding Spaces for Matching Music to Stories

### **Best Special Call Paper Award**

Rujing Huang, Bob L. T. Sturm, and Andre Holzapfel, De-centering the West: East Asian Philosophies and the Ethics of Applying Artificial Intelligence to Music.

During the conference a poll was set up to vote for the best poster and best video presentation and the paper that received the most votes from participants also received popular choice awards.

### **Best Poster Presentation (by popular vote)**

Filip Korzeniowski, Sergio Oramas, and Fabien Gouyon, Artist Similarity Using Graph Neural Networks.

### **Best Video Presentation (by popular vote)**

Laure Pr  tet, Ga  l Richard, and Geoffroy Peeters, Is There a “Language of Music-Video Clips” ? A Qualitative and Quantitative Study

## **Best Reviewer Awards**

Based on the scores provided by meta-reviewers on the quality of individual reviews, in relation to the number of papers reviewed by each reviewer, the SPC selected a total of 16 awardees listed below:

Marcelo Caetano  
Andrew Demetriou  
Christoph Finkensiep  
Fran  ois Germain  
Daniel Harasim  
Ben Hayes  
Chris Hubbles  
Yaolong Ju

Ilaria Manco  
Sandy Manolios  
Eric Nichols  
Emilia Parada-Cabaleiro  
Verena Praher  
Katharina Prinz  
Rafael Caro Repetto  
Maximilian Schmitt

## **II. Diversity & Inclusion (D&I)**

The ISMIR 2021 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 2021 offered a variety of initiatives intended to make the conference a positive, welcoming, and supportive environment for a diverse range of presenters and attendees. Notably, this year’s virtual conference format, combined with generous sponsor support, enabled an unprecedented level of financial support to cover registration and childcare costs. Registration waivers were made available to students, women and other underrepresented minorities in MIR, attendees from low-income countries, presenters in the “New-to-ISMIR” late-breaking/demo track, and unaffiliated attendees. All attendees were additionally eligible to apply for childcare grants. The ISMIR 2021 organizers also worked together to write a number of blog posts aimed to decrease

barriers for participation in the MIR research community, for example, by offering insights into preparing and reviewing scientific submissions. Finally, the ISMIR conference Code of Conduct remained in place for this year's virtual format.

## **Newcomer Initiatives**

Coming to a new conference for the first time can be intimidating and overwhelming. At ISMIR this year, the Newcomer Initiatives Chairs have drawn on the past experiences of the MIR community to provide increased support to newcomers. The initiatives planned for the conference included a pair of special sessions on "Getting the most out of ISMIR 2021", which follow up on a community survey and blog post on the subject published before the conference. The sessions were hosted by Newcomer Initiatives Chairs Nick Gang (Apple) and Elona Shatri (Queen Mary University of London). Another new initiative was the creation of Newcomer Squads, which connected ISMIR veterans with groups of newcomers to answer questions, give advice, and offer support over the course of the conference week.

## **Women in Music Information Retrieval (WiMIR)**

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's initiatives started as informal gatherings around breakfast or lunch during ISMIR conferences (2011–2014), and moved to formal WiMIR events included in the conference program (2015–today) garnering a high turnout of both women and allies. These events provide occasions for people to network and to discuss several important issues ranging from mentorship and conference support, to improving the representation of women and, more broadly, diversity in the community. In 2018, WiMIR started hosting its own workshop as a satellite event, in which attendees of all genders participated. These workshops aim to offer participants an opportunity for networking, put the spotlight on technical work done by women in the field, and foster collaboration between women and allies by proposing group work led by project guides to try to solve small research problems or to undertake new research projects that could lead to longer-term collaborations. The ISMIR 2021 D&I Chairs gratefully acknowledge the support of this year's WiMIR sponsors, whose contributions support women in the field as well as the broader D&I efforts of this year's conference.

## **WiMIR Plenary and Special Sessions**

The ISMIR 2021 conference continued the tradition of including a WiMIR plenary session in the main conference program. This year's WiMIR plenary session featured a keynote talk by Laurel Smith Pardue. The ISMIR 2021 conference also included a number of special WiMIR meetup sessions throughout the week, where attendees could engage in discussion with invited notable women in the field.

**WiMIR Special Session 1:** Cheng-Zhi Anna Huang (Magenta / Google Brain / Université de Montréal / Mila)

**WiMIR Special Session 2:** Emma Azelborn (iZotope, Inc.)

**WiMIR Special Session 3:** Xiao Hu (University of Hong Kong)

**WiMIR Special Session 4:** Katerina Kosta (ByteDance / TikTok)

## **Broadening Diversity & Inclusion in MIR**

On July 7 2021, the D&I Chairs organized an "ISMIR Diversity & Inclusion Summit" at which invited participants discussed four topics: Clarifying the goal of D&I efforts at ISMIR; charting the future of WiMIR; maintaining ISMIR conference accessibility post-COVID; and ethical considerations for ISMIR and WiMIR sponsors. Many possible actions were considered at the summit, including using resources to nurture leadership within and provide support to marginalized and underrepresented groups at ISMIR; altering the organizational structure of WiMIR; continuing hybrid (i.e., physical/virtual) conference formats; and formalising guidelines and benefits of corporate sponsorship. At ISMIR 2021, these conversations continued at two special sessions on the themes of Broadening D&I and Local Initiatives. Each featured a Q&A with a panel of guests and discussion with the audience.

### **Diversity & Inclusion Special Session: Broadening D&I**

**Moderator:** Blair Kaneshiro (Stanford University, USA)

**Panelists:** Johanna Devaney (Brooklyn College and the Graduate Center, CUNY, USA), Zhiyao Duan (University of Rochester, USA), Katherine M. Kinnaird (Smith College, USA), Douglas Turnbull (Ithaca College, USA)

### **Diversity & Inclusion Special Session: Local Initiatives**

**Moderator:** Jordan B. L. Smith (TikTok / ByteDance, UK)

**Panelists:** Sakinat Folorunso (Olabisi Onabanjo University, Nigeria), Meinard Müller (International Audio Laboratories Erlangen, Germany), Elio Quinton (Universal Music Group, UK), Anja Volk (Utrecht University, The Netherlands)

## **III. Special Sessions**

Similar to last year, the Scientific Program Chairs organized six special sessions on trending topics at ISMIR 2021. Brief introductions and session information is provided below:

### **Special Session 1: MIR for Human Health and Potential Panel**

The MIR for Human Health and Potential Panel brings together researchers from music, cognitive psychology, neuroscience, mathematics, and computer science to continue discussion of a topic which began at ISMIR2014. This topic has become increasingly important, especially during an unprecedented global pandemic which has significant impacts on people's health, wellbeing and learning, as their interactions with others are restricted due to social distancing measures.

The COVID-19 pandemic has made music more important as a medium to connect people, to enhance both physical and mental health, and to advance human potential. Social distancing measures have greatly enhanced interest in eHealth and eLearning. Integrating music into digital health/learning technologies helps to make music interventions accessible, scalable, and personalized. Finally, these technological innovations offer effective interventions for health, wellbeing and learning that are safe and non-invasive.

Research at the intersection of neuroscience, medicine, the science of learning, and MIR has the potential to reveal new insights into individual variability and personalized interventions; while mobile systems for collecting physiological data point to promising avenues for ecologically valid studies, and even socially distanced data collection in the home.

**Moderator:** Ye Wang (National University of Singapore, Singapore)

**Panelists:** Frank Russo (Ryerson University, Canada), Elaine Chew (CNRS – STMS (IRCAM), France), Gus Xia (NYU Shanghai, China), Blair Kaneshiro (Stanford University, USA)

### **Special Session 2: IMS Digital Musicology Study Group**

This meeting of the International Musicological Society's Digital Musicology Study Group is open to anyone interested in applying computational methods to musicological questions. The meeting will consist of a series of short presentations about ongoing research projects as well as a general discussion about the future activities of the group.

**Moderators:** Johanna Devaney (Brooklyn College and the Graduate Center, CUNY, USA), Frans Wiering (Utrecht University, The Netherlands)

### **Special Session 3: Promoting Cultural Diversity in MIR Research**

Promoting cultural diversity in MIR research has been recognized by the MIR community as an important task. ISMIR 2021 is proud of having organized a special call-for-papers on cultural diversity, with an outcome of eleven papers accepted. The goal of this session is to reflect on this effort and to discuss how to promote cultural diversity in MIR research in a sustainable manner.

**Moderator:** Scientific Program Co-Chairs

**Panelists:** Magdalena Fuentes (New York University, USA), Xiao Hu (The University of Hong Kong, Hong Kong), Patrick Savage (Keio University SFC, Japan), Li Su (Academia Sinica, Taiwan)

### **Special Session 4: Computational Creativity for Music**

This panel on Computational Creativity for Music will begin by discussing definitions of AI, CC, and what panelists perceive as important differences between the two. Portrait XO will reflect on an artist's experience of incorporating algorithms into the creative process – what works, what doesn't. We will address evaluation, especially work the academics have done to address how we could/should evaluate computational systems and their outputs. Is it sufficient for a machine learning paper to rely solely on metrics such as loss/cross-entropy for evaluation? We will get the panelists' points of view on this, and provide a useful reading list for ISMIR authors aiming to excel at evaluating their creative MIR research.

**Moderator:** Tom Collins (University of York, UK, Music Artificial Intelligence Algorithms, Inc., USA)

**Panelists:** Anna Jordanous (University of Kent, UK), Dan Ventura (Brigham Young University, USA), Geraint Wiggins (VUB, Belgium / Queen Mary University of London, UK), Portrait XO (Artist)

### **Special Session 5: MIR for Music Education**

Computer technology, and MIR in particular, has inspired many innovations in music education, including pitch recognition for singers, score alignment for performance evaluation and AI assistants for student composers. We will discuss the potential of MIR for the future of music education as well as how the needs of music educators can guide MIR research.

**Moderator:** Roger B. Dannenberg (Carnegie Mellon University, USA)

**Panelists:** Zhiyao Duan (University of Rochester, USA), Anssi Klapuri (Yousician, Finland), Alexander Lerch (Georgia Institute of Technology, USA), Daniel Ray (Muse Group, UK)

### **Special Session 6: Ethical Issues in Music Ai – Perspectives on authorship with creative artificial intelligence in music**

In the wake of all the exciting opportunities that creative Ai technology provides artists, a more contentious issue is emerging: that of authorship. Who can or should be denominated as the author of a work created or co-created alongside Ai systems? What is the role of the cultural commons from which ML systems draw their creative energies, especially in situations involving precarious minorities or cultural heritage groups vulnerable to exploitation? How do copyright or related neighbouring rights approach authorship and ownership in these contexts? How can revenue streams generated by the creative Ai works be allocated in a fair and sustainable manner? And finally, what consequences will these choices have for the creative artists, for the industry and for the society at large?

In this session, we will not provide easy answers to these questions, but start exploring them by mapping out authors, owners and stakeholders in various contexts of music production, performance and consumption. Through the identification of the networks of influence, power and exclusion, we can start exposing the ethical ecosystems and the shifting contours of authorship in the Ai music industry. We aim to conduct parts of this session in a workshop format, facilitating an open discussion with the audience.

**Moderators:** Andre Holzapfel (KTH Royal Institute of Technology, Sweden), Petra Pauliina Jääskeläinen (KTH Royal Institute of Technology, Sweden), Anna-Kaisa Kaila (KTH Royal Institute of Technology, Sweden), Sertan Şentürk (Kobalt Music Group)

## **IV. Late Breaking/Demo Session**

This year's Late-breaking/Demo (LBD) session introduced two changes to previous years' iterations of the event. First, taking advantage of the remote conference format where space is no longer a constraint, there was no upper limit to the number of submissions accepted, providing more opportunities for people to showcase their late-breaking work. Second, a New-to-ISMIR special track was introduced wherein student authors who are looking to join the community for the first time were encouraged to submit their work and receive extra mentoring. The mentoring process included a light review process where 'mentors' assigned to each paper gave constructive feedback, thus giving participants a taste of peer-review and enabling them to refine their camera-ready submissions and facilitate effective presentations. In total, we received 38 regular track and 20 special track submissions, respectively. Sixteen ISMIR reviewers served as mentors in the special track, allowing each mentee to receive up to two reviews with detailed written feedback. With these changes, we hope to invite more people to our community and inspire future innovations in the LBD format.

## **V. Music**

ISMIR 2021 Music Program could be entitled "A festival of visual music." We received an overwhelming amount of works in the category of creative visuals. The unexpected high number of submissions (46) made it very hard to select the pieces to be presented. However, we think we had a great selection of works — not all of them related directly to MIR — that constituted an excellent musical counterpart to the scientific program. Split into four short online concerts — two of less than 30 minutes each, another two around 40 minutes each — the program only featured musical works with a visual counterpart, be it creative visuals, networked ensembles, or (recordings of) live performances. We realized that works that had no video (e.g. acousmatic music) should not be presented in this (online) format for reasons that have



nothing to do with the (sometimes) great quality of the music — it simply would make it very hard to fully appreciate these works. Here is a list of music pieces that were presented in ISMIR 2021:

### **Concert 1**

**Symphony in Blue 2.0**, Istanbul Coding Ensemble with Jerfi Aji, piano

**Xeno**, Enrico Dorigatti

**Three Tunes from the Ai Frontiers**, Bob L. T. Sturm

**toy\_5**, Eric Lemmon

**History Has Stopped at 2021**, Vanissa Law

### **Concert 2**

**Golden Cuttlefish**, Timothy Moyers

**Topos**, Giuseppe Desiato

**Things I Have Seen In My Dreams**, João Pedro Oliveira

**coalesce;**, Tamara E Ray

### **Concert 3**

**Lullaby for Stepanakert**, Joseph Bohigian & Ensemble Decipher

**Butterfly Garden**, Donya Quick

**Forme Cangianti**, Fabio Morreale

**Quartet**, Ted Moore

**Inkblot**, Serge Bulat

**Music for Virtual Togetherness**, Poli Ético Choir

### **Concert 4**

**Rooftops**, Modality

**String Quartet**, Hendrik Vincent Koops

**Apocalypse – Future**, Oregon Electronic Device Orchestra

**The Seals: Networked ensemble of pre-recorded live performance with creative AI assisted visuals**, The Seals

**Horizon**, Mojtaba Heydari, Frank Cwitkowitz

Music was alive and kicking at virtual ISMIR 2021!

## **VI. Industry Sessions**

The Sponsorship Program Chairs organized eight industry sessions over three themes. Brief introductions and session information are provided below:

### **Industry Presentations**

Over four sessions, the Sponsors of ISMIR 2021 showcased the research, engineering and product work conducted in their companies with talks, demos, and (for platinum sponsors) Q&As.

**Participating Sponsors:** Spotify, Sony, Adobe, Bytedance/Tiktok, Pandora, Yamaha, Deezer, Dolby, Izotope, Orfium, Utopia Music

### **Industry Panel: MIR Technologies Across Cultures**

Users of MIR technologies come from all around the world. Technologies intended for one sonic landscape sometimes generalize to others. Sometimes, they require additional patience and research to adapt to a new user base. In this forum,

panelists from audio industries and academia discussed the exciting opportunities, challenges and lessons learned that come from implementing audio technologies across users with very different needs and sonic cultures.

**Moderator:** Gus Xia (NYU Shanghai (CST))

**Panelists:** Ajay Kapur (California Institute of the Arts), Rujing Huang (University of Hong Kong), Lamtharn “Hanoi” Hantrakul (ByteDance/TikTok), Oriol “Uri” Nieto (Adobe), Akira Maezawa (Yamaha)

### **Industry Panel: MIR Technologies and Education**

Technology plays a key role in education. This panel will dive into education in its broadest sense, from audio technologies that directly improve the learning process in music or speech related activities (e.g. learning an instrument, learning to speak a language), to technologies that aim to guide and educate users in a sound related endeavour (e.g. music production, video editing, cultivating interest in a new musical style) as well as health and well-being.

**Moderator:** Xavier Serra (Universitat Pompeu Fabra)

**Panelists:** Cynthia Liem (Delft University of Technology), Anja Volk (Utrecht University), François Pachet (Spotify), Fabien Gouyon (Pandora)

### **Masterclass: CV Review**

ISMIR Masterclasses are intended to familiarize current students and recent graduates with interviews and processes they may encounter when looking for MIR-style roles in industry. This session focused on CV and resumes for audio, MIR and machine learning related roles. We go through tips and tricks for making your resume stand out with Chris Bakes, a Campus Recruiter at TikTok and previously University Recruiter at Facebook AI.

**Panelists:** Chris Bakes (Campus Recruiter, TikTok/ByteDance), Lamtharn “Hanoi” Hantrakul (Research Scientist, TikTok/ByteDance)

### **Masterclass: Systems Design Interview**

ISMIR Masterclasses are intended to familiarize current students and recent graduates with interviews and processes they may encounter when looking for MIR-style roles in industry. This session focused on a Systems Design Interview based on MIR technologies. This type of interview is distinct from the Technical Coding Interview or ML Interview many attendees may be familiar with. Research code is not Production code. Systems Design tests awareness of the scalability and maintainability of a solution and the technologies used to robustly achieve the demands of a product. This session featured a deconstructed mock interview and industry best practices.

**Panelists:** Peter Sobot (Staff Software Engineer, Spotify), Lamtharn “Hanoi” Hantrakul (Research Scientist, TikTok/ByteDance), Sertan Şentürk (Lead Data Scientist, Kobalt Music Group)

## **VII. Lab Showcase**

This year, we introduced a new event called the Lab Showcase to the ISMIR conference. Academic labs focusing on MIR research were invited to showcase their lab at virtual booths. There were 33 lab participants across 17 different countries, showcasing their labs through live sessions and lab introduction materials at the virtual booths. Participating labs were also invited to post vacancies together with sponsors in a Job Board. By introducing the Lab Showcase, we hope to give a perspective on MIR research world-wide, enable connections between institutions and prospective students or collaborators, and simply make it easier to reach out to and learn more about various labs across the globe.

## **VIII. Satellite Events**

In addition to the main conference, two satellite events were offered to participants:

1. The Music Demixing (MDX) Challenge, November 12, 2021 (online)
2. 2nd Workshop on NLP for Music and Spoken Audio (NLP4MuSA 2021), November 12, 2021 (online)

## IX. Acknowledgements

We are happy to present to you the proceedings of ISMIR 2021. The conference program was made possible thanks to the hard work of many people, including the ISMIR 2021 conference chairs, the administrative staff at Georgia Tech School of Music, ISMIR Board members, volunteers, and the many reviewers and meta-reviewers from the program committee.

We would also like to thank our sponsors, whose contributions made this conference possible:

### *Platinum sponsors*

- Sony CSL
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- Utopia
- Audible Magic

We would like to thank the sponsors that explicitly chose to sponsor WiMIR, its grants, and its initiatives:

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- Ableton
- Pandora
- Adobe

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ISMIR 2021 would not have been possible without the exceptional contributions of our community in response to our call for participation. The biggest acknowledgment goes to you, the presenters and the participants.

Zhiyao Duan

Juhan Nam

Preeti Rao

Peter Van Kranenburg

**Scientific Program Chairs**

Jin Ha Lee

Alexander Lerch

**General Chairs**