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The International Computer Music Association

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INTERNATIONAL COMPUTER MUSIC ASSOCIATION

Editorial

This ICMC was very special in several respects. It was the first ICMC to be held in South America, it was postponed for one year, and the double-feature ICMC was the first ever ICMC taking place fully virtual using the platform Deck10.

Hence, also this ICMC Special Issue is be a bit different from the previous ones. Besides a review on the opening concert, which contextualizes the presented music in a broader historical context, you can find personal experience reports as well as reviews of XR works – a new category within the ICMC call, which was launched for the first time and explicitly in reaction to the change of ICMC2021 to a virtual format. And last but not least, congratulations to all the winners of the ICMA awards, which were presented during this conference for two years, 2020 and 2021!

Hence, this issue aims to provide you with a glimpse on how it was like to organize and attend this very special ICMC2021.

Figure 1. Campus at Pontificia Universidad Católica de Chile (photographer: Gonzalo Beltrán)

ICMC 2021 breaks new ground in the pandemic
By Kerry Hagan

The International Computer Music Association (ICMA) convened the first International Computer Music Conference (ICMC) in 1974 at Michigan State University in the US. The ICMA was a new organization, only just incorporated as a non-profit in California, USA. For nearly ten years of ICMC, various institutions in the US hosted the event. Then, in 1982, the Venice Biennial hosted the ICMC outside of the US for the first time. That marked the beginning of a tour of locations in the US and Europe. Eleven years later, the first ICMC in Asia took place in Japan.

In 2021, the Pontifical Universidad Católica de Chile hosted the first ICMC in South America. It was, however, a bittersweet first. Covid-19 derailed our 2020 conference hopes and our wishes to visit Santiago. And, as 2021 approached, we realized that traveling to Santiago was still not possible. So, though it was a first for being hosted in South America, ICMC 2021 was the first time the conference went online.

Rodrigo Cádiz and his team were the perfect partners for undertaking such a challenging task. They quickly responded to the fluid changes of lockdowns and restrictions and ultimately hosted a marvelous conference. With virtual concerts, installations, paper sessions, workshops and booths, we could meet each other online and share our work and research.

Although I took on the role of President of ICMA in March of 2021, the real work on behalf of the ICMA Board came from the previous President, Tae Hong Park, and our former VP of Conferences, Rob Hamilton. Rob worked with Rodrigo and supported virtual installations on Mozilla Hubs, creating more firsts for us.

We learned a lot about presenting virtual events, experiencing what worked well and what did not. It gave us experiences that will help us in future ICMCs to be more accessible to a broader membership. Given this knowledge, the next ICMC will be a hybrid conference hosted in Limerick, Ireland, and online.

Since the University of Limerick is hosting ICMC 2022, I am tasked with

two roles: President of the ICMA and Conference Chair of ICMC 2022, and I cannot express my excitement for the conference to come. I'm working with a phenomenal committee of colleagues in Limerick and relying on the years of expertise of the ICMA Board, including Rodrigo. He continues with the ICMA as an Americas Regional Director.

ICMC 2021 taught us many valuable lessons, and it demonstrated the large and global community in computer music. Cádiz and his team pulled off a great accomplishment and gave us a model for online content in future ICMCs. The online format broadened the contributors and connected us around the world in virtual concerts, workshops, booths, installations and through meeting rooms and chats. In these ways, ICMC 2021 truly broke new ground.

We hope that this encourages you to actively engage with us. If you are, e.g. interested in hosting an ICMC in your region, or if you plan concerts or festivals that might be of interest for our community, please contact me or one of your region directors for more information.

Considerations about the International Computer Music Conference 2021
By Antonio Carvallo P.

Between July 25th and 31st, 2021, the International Computer Music Conference ICMC was held in Santiago de Chile, organized this year by the International Computer Music Association and Pontificia Universidad Católica de Chile.
The conference, which should have taken place in 2020, was held online in 2021 due to the pandemic.
In my role as music co-chair I could see that this new format meant new challenges, but also new opportunities.

It is true that trips and the opportunity to know another country, another culture were missed this year. However, accessing a paper or a workshop held in a distant country from home seemed to give a different dimension to the technology with which we work and whose musical scope has always been reflected on at the ICMC. Curiously, technology – always coming to the conference from different levels of our work such as analysis, sound, or algorithms generation – found a different dimension now: if it was use to gather us together to meet our interests, now it also brought us the opportunity to meet each other and listening to each other in a much broader sense.

Through pandemic times it was comforting to meet – via Zoom – with several colleagues in the real-time spaces of papers and workshops. In fact, these rooms for conversation balanced certain coldness and distance from the previously recorded exhibitions; because these probably were too perfect, too direct. All sum up, the essence of what summoned us in this type of activities seemed intact: the exhibitor managed to communicate the achievements of his artistic or research work and a frank and open dialogue was generated between him and the attendees. However, at the end of the paper presentation, when the questions and the conversation with the author finished, a void was suddenly opened: the private conversations with some of the attendees outside the exhibition hall was replaced with the closure of the application (Zoom) and the subsequent silence or local noise of our own environments.

When the concert time had come, we join from the now ambiguous comfort of our own home, our own space, we once again missed, already more radically, the space itself. Something was missing from those stereophonic concerts. An essential part of our works, since the years of the pioneers, is the relationship between sound, us, and space. Although this problem can be solved through binaural techniques and the use of headphones, it was clear that a vast majority of the compositions did not aim at a work on this field. A considerable distance appeared here between these concerts and a face-to-face instance. Noticing this lack of proximity, a retrospective question for the papers related to the study of spatialization emerges. This year these reached the status of impertinent due to a technical deficiency that we never imagined: the impossibility of being together.

Despite this, just imagining an encounter like this around another kind of music seemed difficult. Somehow, the pandemic scenario and the online version of the ICMC 2021 to which it pushed revealed a dimension of our music that we do not usually think about: the technological resource seems to be physically present with discretion today, endowing our creative processes with a kind of immateriality that allows us to connect with great fluidity, putting reflection and knowledge at the center of our activity: the thought at the center of everything. At some level, our work tool - the device - was never so absent as it was this year conference; it seemed like its only job was to connect us. In this 2021 conference we were witnessing a single technical deficiency: the impossibility of getting together physically. The lack of physical proximity has been saved by the technique itself, which this time seems to act inconsiderately in the background, allowing our reflection to be brought to others and to other areas, a reflection that arises from technology and finds its possibility in it.

We had a great remote conference, but we want to meet again. I think that in the next face-to-face ICMC we should take everything that allowed us to be together this 2021. Technology has gained a new space that I think should not be suppressed. Thus, I imagine an ICMC like

the ones before, but with the presence of colleagues that present themselves in a virtual way, adding another dimension to the Conference, an immateriality that is heard. It will always be relevant to be in person to listen to the space that sounds and resonates, but another dimension has been opened for the Conference. Therefore, I believe that a certain number of papers dictated remotely by those who cannot face the trip to the organizing city should be kept in a face-to-face conference.

After ICMC 2021, physical distance should not be an impediment to hearing everything that can be said. Therefore, it would be interesting to keep the "listening room" from this year Conference. The next one could include a certain number of stereo works and, why not, it could be available, from now on, to the general public, an audience that, interested in this type of artistic-musical expression, begin to deepen their listening experience. From technology itself, the International Computer Music Association would establish an unprecedented liaison with the non-specialist public.

Finally, I believe that we must think about how we can relate to this new reality that the pandemic has brought: being able to meet despite the distance. The virtual format can provide a door into a space which is traditionally filled by the conference's local space, being open to all those who, for any reason, are far away; a space for works and papers exhibited remotely, which can be accessed online from different countries; a space to talk, to comment, and to meet.

Although we can only imagine the future from this new situation, we know that it has been made possible and will continue to be made possible by computer media, the media that are our element, which have served to articulate our artistic, scientific and research work and thought.

A virtual ICMC
By Tomás Koljatic S.

I was absolutely thrilled when, during 2019, Rodrigo Cádiz suggested that the Pontificia Universidad Católica de Chile (the institution where we both work in Santiago) should host the ICMC 2020. Antonio Carvallo and I jointly accepted his invitation to join the team (as Co-chairs of the music track) and assist him in the organization of the conference. Up to 2018 I had been in charge of an international contemporary music festival hosted in Chile, and, as a composer, I had some background in music technology, so I was thankful and delighted to have an opportunity to put my experience to a good cause. The unforeseeable global COVID-19 pandemic, the ensuing stay-at-home orders, and restrictions on international travel, prevented the ICMC from taking place in 2020. When it finally did take place, in July 2021, it was a conference quite unlike the one we had originally imagined. Just like the rest of the world had to readjust to a new reality, so did this conference, and, after consulting with the ICMA, the decision was taken to completely stream the event through the internet.

Of course, the change in format entailed some inescapable drawbacks for the organizing committee. For one thing, we could not showcase our country's culture, our hospitality, and the formidable landscape of the Andes mountains which towers over Santiago. Participants missed the opportunity to explore our beautiful university campus, formerly a convent built in the early 20th century in an impressive Neo-Romanesque style. We could not enjoy the natural acoustics of the large church, where concerts are frequently held, and we were not able to host the event at the Centro de Extensión Oriente, a brand new convention center with a concert hall seating some 250 spectators, and equipped with a state-of-the-art audio system. The ICMC 2020 would have been the first large-scale event hosted in the venue! Most regrettably, we lost the opportunity to meet and socialize in-person, and to share, unhindered by computer screens, our spontaneous reactions to the concerts, presentations, panels, installations and workshops.
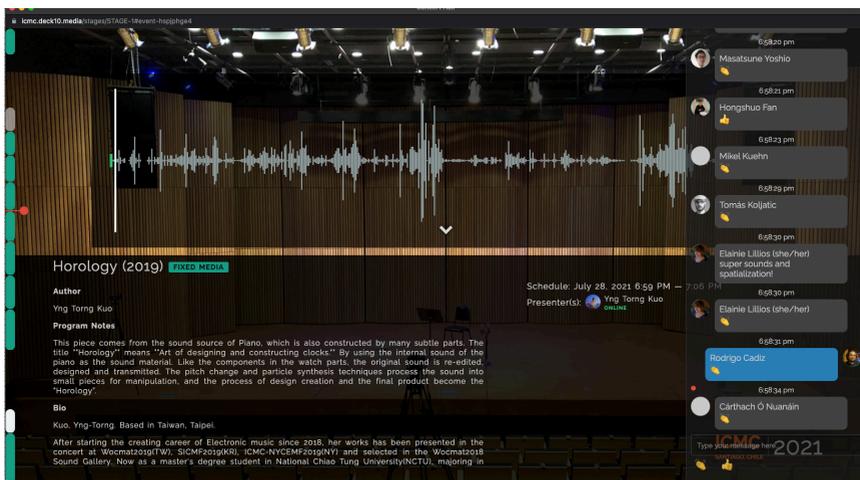
Figure 2. Screenshot from a concert in Deck 10 during ICMC2021.

COVID-19 cases in Santiago spiked dramatically in the months leading up to the conference. As a consequence, strict lockdown orders were put in place by national health officials, which meant that we were unable to access the premises of our university for several months. This created a new level of challenge as we could not produce ourselves new recordings of all the works for instruments and electronics selected for performance at ICMC. Thus, we had to rely mostly on recordings provided by the composers themselves, which resulted

in only a handful of local instrumentalists being able to collaborate in the event.

In addition, the audiovisual works presented at the conference had to be streamed through the internet, which entailed mixing them down to stereo (in the case of multichannel pieces), and compressing the audio and video. It also meant that the quality of the listening and viewing experience was restricted by the quality of the equipment available to each member of the audience (which could range from low-cost

earbuds or laptop speakers to professional audio systems, and from smartphone screens to high-definition projectors) and the acoustic and visual conditions of the room where the conference was streamed from. Similarly, installations (which are meant to be experienced directly, firsthand, in a particular space and time) had to be canned and played back. As a result, I am sure that many, if not all, artists featured at ICMC would agree that their works would have been better served had the conference been held in-person. For better or for worse, quantitatively speaking, today most art is experienced (or more aptly stated, "consumed") through internet services such as YouTube, Spotify, or Netflix. Arguably, many works presented at ICMC 2021 seemed to embrace these rather restrictive formats compatible with streaming platforms and thrive in them.

The technology provided by Deck 10 made ICMC 2021 possible. The company offered a first-class solution for hosting the conference online: a platform with a slick web design that integrates, among other resources, audio and video stream-

ing, and social networking capabilities. Most of the activities were pre recorded (and well rehearsed!), and uploaded to the platform in advance. The events could be watched both in real-time as well as on-demand, which was very handy for participants in different time zones.

For this instance, holding a virtual conference was, evidently, an emergency solution prompted by the global pandemic. I am no futurologist, but I believe that most forthcoming summits, academic conferences, trade shows and other such events will include both online and in-person activities. Video conferencing can be a very valuable tool to permit the participation of those unable to travel long distances. In the coming years, remote participation will be even more common, although I see it as highly improbable that, in the short run, we will eschew international gatherings altogether. Although some things can be done very efficiently through the internet, networking (one of the most important reasons these events exist in the first place) seems much more difficult to carry out effectively through a computer screen. This may gradually change

as technology advances, and as we learn to use and take advantage of it in improving group dynamics.

Despite the unexpected complications, technology and ingenuity allowed the team led by Rodrigo Cádiz to hold a memorable ICMC 2021. Video conferencing and hybrid classrooms have become a staple of the daily routines of most of us in the last few years, and this tendency is likely to keep growing in the future. The forthcoming ICMCs will undoubtedly face (and answer) the question of, "in what manner, and to what extent, to allow for remote participation?". The success of the virtual 2021 ICMC has set an important precedent for future editions.

An Excursion into Electro-acoustic Music History
By 亓梦婕 *Mengjie Qi Maggie*

ICMC 2021 was successfully held online from July 25th to 31st. It was hosted by the Pontificia Universidad Católica de Chile, Santiago, Chile. The inaugural concert on the 25th opened the festival, and all six pieces were electroacoustic: a fixed-medium piece *Spectral Variations* by José Vicente Asuar, interactive electronic and video piece *The Metered Tide* by Chris Chafe, an improvisation *Another Time* by Chris Chafe and the Quarantine Session Performers, *After Long Drought* for vibraphone and live interactive electro-acoustics by Elainie Lillios and Scott Deal, and *Kontrol* for performer and electronics, and visual music *Tesseract* by João Pedro Oliveira. This concert was a perfect interpretation of the conference theme "the virtuoso computer: redefining limits". It highlighted the role of the computer and of virtuosity in computer music. The relationship between computer and composer/performer is always a matter of concern in electronic music. With the fixed media, interactive computer music, and visual music works

presented on this concert, it clearly outlined the features of different stages of electronic music from an historical perspective. Virtuoso refers to the skills and interpretation of the music performer in the performance. In computer music, it also means the composers utilize and personalize the endless possibilities provided by computer. This concert, a sampling of computer music from different periods, was an excursion into electro-acoustic music history. It is a highlight of various genres and techniques and provided the audience with a sense of the evolution of computer music. This review also focuses on the musical aspects of these pieces from an ontology perspective.

In the 1950s, with Pierre Schaeffer and Pierre Henry in Paris, Stockhausen in Cologne, Vladimir Ussachevsky, Otto Luening, Milton Babbitt, Charles Wuorinen at the Columbia-Princeton Electronic Music Center in New York, and Toshiro Mayuzumi in Tokyo, the classical studios were established and in their golden time. These composers were the giants in electronic music history. However, José Vicente Asuar's Spectral Variations (Variaciones es-

pectrales) on the program reminds us that there were so many other talented composers from various parts of the world who were studying, composing, and contributing to the electronic music field at about the same time. They added their cultural background into music, brought the concept and technique of electronic music back to their country, and helped to disseminate electronic music virtually everywhere. Spectral Variations shows how the music was wonderfully conceived and delicately created. The first piece of this concert features one of the most well-known works of Asuar, who is one of the founding fathers of Chilean electroacoustic and computer music, and the inspiration behind the conference's theme. He was regarded as the pioneer of Chilean electronic music at the national level and the first electronic music composer of the Latin America. This concert was also a tribute to this founding fathers of Chilean electronic music.

Spectral Variations was composed in 1957. It is musically consistent. The four movements are based on the interval-based motive at the very beginning. The motive fully develops with rhythmic patterns, repetitions and arpeggiations though-out the movements; especially the voices in high, middle and low registers work together in terms of repetition and crescendo, finally leading the music to the climax in the fourth movement. This last part is a blend of all materials and enhances the motive. José Vicente Asuar uses sine wave, square, impulses and white noise in four variations: Acordal, Linear, Evocativa and Obsesiva. The consistency is also reflected in the texture and timbre of the four movements. The melodic voices in the high, middle and low register create dialogues between each other. The clear structure of the form reminds on the influence and foundation the composer absorbed from the western composition techniques. This piece is a sound experiment within musical structure. Even though it is an electronic music piece, it involves traditional means including polyphony, ostinato, repetition, and the importance of intervals.

The Metered Tide composed by American Composer Chris Chafe and videographer Greg Neimeyer is a composition for visuals, electronic

cello and electronic music. This work touches one important aspect of electronic music, namely improvisation. The composition includes three kinds of sound materials: concrete sounds (sea waves, surrounding sounds), the electronic cello (celletto) improvisation, and an sound element with an electronic synthesizer timbre generated from one hundred years of tidal data records which serves as the base of the structure. While listening to the concrete sounds, the live performer Chris Chafe is able to react with his cello play in real-time to the generated sound and improvise; the consistency of his performance perfectly shows his improvisation virtuosity. The sound materials hereby closely intertwine with each other. The wide register range between celletto and the electronic sounds are distinct, which makes the two voices to some degree independent. I would take this contrast as two different roles within the music.

The video is filmed in the Crissy Field, Golden Gate National Recreation Area at the upper tip of San Francisco next to the southern end of the Golden Gate Bridge, which is the visual background of the performance. The visuals include three elements which are the waveform interacting with the sound signal, the shore and sea waves, and Chris Chafe as performer playing electronic cello. In the final section of this piece, the performer put down his instrument and walks away from the center of the image, leaving only the sound and image of sea waves until it ends with a black screen. This kind of performance management is quite narrative and it is also a significant character of concert performance. It provides the audience with a more immersive impression, just like the experience in a concert hall. The waveform centered in the image vividly responds to the title of the piece. It could be regarded as a new dimension to meter the sound and the visual. The visual center includes the waveform and the performer. Even though the visual scenes change frequently, the images are quite effective to enhance the dramatic tension of the music, especially, as the sound and images are closely synchronized which allows the musical climax to build up with the fast-changing images.

Chris Chafe, the Director of Stanford University's Center for Computer Research in Music and Acoustics

CCRMA has been devoted to electronic music improvisation for many years. In this concert, Chafe improvised with Quarantine Session Performers to offer a tribute to all musicians and composers who have endeavored to spread music during the COVID-19 period. All the sound materials were collected from the online performances and talks from March 2020 to July 2021, thus creating a retrospective of this special period. Chris Chafe and Scott Deal are the main passionate supporters in this field. The format of online sessions also comes with some extra benefits, such as helping to reduce CO2 emissions, and providing the possibility for people to join the event to share ideas and music without traveling.

After Long Drought (2016) for vibraphone and live, interactive electroacoustics is composed by Elainie Lillios and performed by percussionist /composer Scott Deal. Lillios was inspired by Wally Swist's poem with the same title. It is one of my favorite pieces and it was included on the concert I curated on the Design Day Marathon Festival in October 2021. The collaboration between composer and musician is always a

subject in electroacoustic music performance. In this case, they both have encountered each other's composing and performing from 2011. The collaboration between musician, composer, and methodology involved in creating a piece together not only relies on virtuosity and techniques in western composition and computer music, but also the common understanding of musical structure and the shared aesthetics. Scott Deal has put his energy into exploring the diverse sounds from the prepared percussion instruments which give inspiration to the composer. He performs every section with one specific technique or timbre to enhance the timbral diversity in the structure. In the progress of writing this piece, Elainie also left some space for Scott to improvise with the electronics which contributes to his unique aesthetics and experiences with the instruments. The intense rhythmic beginning with thunder and rain sounds creates an atmosphere directly and vividly outlining the scenery of the desert in wind and storm. Each section of this piece is presented with a certain timbre and instrumental technique to draw a scene of different parts of the windy desert and re-

flect the metaphor of the unpredictability and tumult of life. The music ends after a steady rain-storm and fades into a peaceful moment.

Kontrol is a virtual percussion piece for one performer and electronics. João Pedro Oliveira introduced this piece as: "Movements correspond to sounds and sounds correspond to invisible instruments", that explicitly shows the mapping of sound and actions. Even though the percussionist is not sending any sensory information to the electronic music modules, the seamless mapping of his action to the sound contours makes it convincing and interactive. The sound contours and transformations are clearly recognizable in his performance. They even enhance the emotion and tension in the musical journey. In the coda section, the music suddenly changes from abstract granular and metallic timbre to a typical drum sets. It looks like the composer was demystifying where the abstract sounds came from. This unexpected design reveals Oliveira's mature virtuosity in communicating by way of his sounds and music.

João Pedro Oliveira's *Tesseract* (2017)

was the last piece of the concert. The interaction and mapping of this visual music is quite delicate. The hypercube transforms into multiple states and textures via transforming, rotating, decomposing, reconstructing, erosion, twisting, and changing the lighting and textures. The synchronization of sound and image is seamless, which is a typical characteristic of algorithm-based art and music composition. The visuals are created by the composer as well, a workflow which guarantees the unity of sound and visuals. The video starts showing a huge cube on the canvas, which then splits into many small-scale hypercubes in different sizes. While the visual elements go through decomposition, rotation, reorganization, erosion, distortion, color and light perception by changing the texture and color temperature of the image, the sound texture also changes its timbre in a similar manner to the visuals. The image is transformed from a cube with edges and corners to lava-like images with animal feather-like texture, plane images with mirror texture, micro-cube arrays with three-dimensional depth, plane images with paper sheet-like texture, and liquid dynamic images.

At the same time, the particle-like visual elements continue to swim around the screen. The elegant granular and bright clean metallic sounds highlight the music exquisitely.

This concert presented examples from the development of electro-acoustic music spanning from the early studio piece in the 1950s, mixed electroacoustic music with in-struments, interactive music perfor-mance and improvisation, to algo-rithm-based audiovisual music. We have seen the development and the virtuosity of the technology and the aesthetics changing the music para-digm. This concert opened ICMC 2021 successfully, highlighting es-pecially a tribute to Chilean com-posers and their contribution to the community.

MusicXR @ICMC2020/21

Recognizing the extraordinary situation of a completely virtual ICMC, there was a special call for works and experiences to be presented within the virtual conference venue using XR technologies. The call invited works ranging from virtual representations of sonic installations, and interactive concert pieces, to wholly new experiences in XR using browser-based presentations and formats suitable for virtual reality head-mounted displays. At the conference, 11 MusicXR works were shown. In the following, you can get an impression of four of them.

4 reviews

By Patrick Hartono

Antiphon by Andrew Blanton

Antiphon is a virtual audio-visual "venue" and instrument controllable via a remote server through incoming streaming data from Max/MSP. There is no specific information regarding the audio and visual methods executed over the browser. However, it seems the scale values of the 3D object are synchronously animated with the audio (audio-reactive). It would be interesting to know whether the musical elements are generated using the web-based synthesizers or a specific approach on computer side which then streams the audio over the internet. In contrast with the other works, *Antiphon* does not focus on the visitor's interactivity but offers a unique performative experience, where the audience can freely decide their individual perspective within the space. Moreover, since the visitor's movement is not restricted and the level design is considered an "open space," this may cause disorientation for those new to this kind of 3D platform.

Although this virtual space is not constructed using Mozilla Hubs, there are appear no significant differences since New.ArtCity (medium used) was also developed upon three.js similar to Mozilla Hubs.

Extrapolations on a Vega Banjo by Brian Ellis

This virtual reality installation allows visitors to interact with a virtual Banjo in a different way than usual. Visitors are not playing a Virtual Reality Musical Instrument, but explore a gigantic Banjo environment through an immersive virtual expe-

rience similar to a sound walk. This unique approach aims to manifest the notion of a connection between performer and artifact from a different perspective.

The audio materials of this work serve two functionalities: as primary musical material and sub-materials that are placed spatially in different locations and offer various aural nuances. The visitor is encouraged to locomote and explore the surrounding environment, which simultaneously determines the individual sonic experience. The combination of scratch sounds from the Banjo resonator and a continuous drone engenders a distinctive soundscape structure. However, the variety of sound gestures and timbre seems only dominant at a particular location (center). In my opinion, it would be interesting to have more audio zones with different types of timbre in other areas of the environment to achieve multi-layers of sound immersion. Since the ground surface (topography) is flat and without any additional objects, the interactivity aspect between visitor and environment (Virtual Banjo) seems to be neglected, which actually can be an essential element in enriching the sonic experience. The visitor's loco-

motion has no variations besides adhering to the topographic design that adapts the Banjo shape.

Fountain by Matthew Gantt

Fountain adapted the participatory approach as a means for the visitor to respond to the generative soundscape that continuously plays in the background by adding additional sound using the "Import Media" feature. Visitors can add sound from any online streaming link within Mozilla Hubs without complex procedures. Furthermore, with the spatial panning mode, each audio added by the visitor will sound spatially regarding its location, creating immersive sonic scape.

Since the fountain is located in the middle of a virtual forest and visitor's locomotion is not restricted, it would be interesting to have "ornamental objects" surrounding the fountain or encourage the visitor to share visual objects such as 3D objects, images, videos, even drawing which is also possible with Hubs. I can imagine, that it would be interesting if the animated elements that orbit around the fountain can move off-set from the center location, greet the visitor as they enter the room, and begin to

approach the fountain.

The Big Crash VR **by Malte Steiner**

The Big Crash VR is an immersive virtual reality artwork inspired by the urban phenomenon of "gentrification" due to the instability of the real estate market in most big cities nowadays. It is originally an expansive art project that can be manifested in different forms such as physical installation, live electronic performance, etc. The 3D asset and audio files' creation are uniquely different from the other works because they are made based on the data harvested from the real estate ad site and CAD data (Berlin), then processed using machine learning algorithms.

I was fortunate to have a chance to experience this piece in a different format (standalone VR with Oculus quest), which is, in my opinion, not much of a difference, since Mozilla Hub sites can also be displayed using HMD. There is one specific object from the Oculus version I like, and it seems it does not exist here – a vertical animated object that can function as an escalator for the user to go above the building.

Regarding the environmental de-sign, this work has created a well-elaborated surrealistic virtual space that disseminates all objects evenly within the environment. The objects comprise 3D objects (animated and static), image fragments, and a custom image texture for skybox; I assume the environment was previously created with a 3D modeling software and then arranged within the Hubs environment. The animated object (buildings) functions as "bridge" (metaphorically) with which the environment is interacting with the visitors, particularly, in my experience, when entering the building. However, this mesmerizing immersive experience would be more engaging if more musical material is applied within the environment, perhaps, for example, on each building(?).

ICMA awards
By PerMagnus Lindborg and Christopher Haworth

At the ICMC2021, we had two years of winners to announce in the categories music, papers and presentation! The winners were selected in a 2-step process: first, a short list was created based on the reviews of the double blind reviews, and then, a jury awarded the winner from this short lists.

ICMA Awards 2020

ICMA Student Music Award 2020
unawarded

ICMA Music Award 2020
Jon Nelson - "When Left To His Own Devices"

Laudatio: ICMA Music Award 2020 goes to Jon Nelson for "When Left To His Own Devices" for fixed media (ID 85), which escapes the topoi of acousmatic works by establishing structural relationships over time and with repeated listening; a form emerges, supported by strong spatialization between grungy background drones and haunting foreground metals, that suggest coherent exploration of the ambiguity of childhood and the supernatural.

ICMA Paper Award 2020
Federico Schumacher, Vicente Espinoza, Francisca Mardones, Rodrigo Vergara, Alberto Aranguiz, Valentina Aguilera - "Perceptual Evaluation of Sound Trajectories in Space"

Laudatio: The ICMA 2020 award goes to Federico Schumacher et al for The Perceptual Evaluation of Sound Trajectories in Space. The panel felt the results will be of great relevance to electroacoustic composers who work with spatial audio, but may be less familiar with the psychoacoustics literature. We were also happy to be able to recognize a paper from Chile, the home of ICMC 2020 / 21!

ICMA Awards 2021

ICMA Student Music Award 2021
王 梓屹 [Wang Ziyi] - "Particle storm"

Laudatio: ICMA Student Music Award 2021 goes to 王 梓屹 [Wang Ziyi] for "Particle storm" for fixed media (ID 63) for a lovely and engaging 'cinema for the ears' with sonic elements that are organic and finely focused to maintain fluidity

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throughout, with clear harmonic direction and internal rhythms that contribute to the construction of a well crafted global form.

ICMA Music Award 2021
Iván Ferrer-Orozco - "De cómo a la memoria se han de juntar los suspiros"

Laudatio: ICMA Music Award 2021 goes to Iván Ferrer-Orozco for "De cómo a la memoria se han de juntar los suspiros" for tenor recorder and electronic media jockey (ID 190), for its thoughtfully composed coherent form with edgy, glitchy details integrated in a soundscape where synthetic and acoustic elements are closely matched to capture the listener's attention.

ICMA Paper Award 2021
Pierre Alexandre Tremblay, Gerard Roma, Owen Green - "Digging it: Programmatic Data Mining as Musicking"

Laudatio: The ICMA 2021 award goes to Pierre Alexander Tremblay, Gerard Roma, and Owen Green for Digging it: Programmatic Data Mining as Musicking. What impressed the panel in this paper was the focus on usability, durability, community and collaboration. As well as of-

fering a valuable new toolbox for data-driven programmatic work with sound corpora, the paper is a model for audio research that is accountable to the wider music and arts community. Well done!

Committees

The music awards were selected by: Deborah Kim, Marta Gentilucci, Andrea Cera, Tomás Koljatic, Antonio Carvallo, and PerMagnus Lindborg (chair).

The paper awards were selected by: Douglas Keislar, Chryssie Nanou, Maggie Qi, and Christopher Haworth (chair).

ICMC Award 2021/21

The award for best presentation at ICMC2021 was awarded based on ICMC attendees votes.

ICMC 2020/21 Presentation Award
Richard Dudas - "Machinatuosity": Virtual Strings, Spectral Filters and Temperament Tools for 'Esquisse'

Congratulations to all winners!

Authors of this issue

Antonio Carvallo is a Chilean composer born in 1972. He studied at Universidad de Chile, where he took a BA in Composition, as well as an MA and PhD in Esthetic and Art Theory. He also studied Electronic Music at Conservatorio Santa Cecilia, Rome, Italy. His compositions have been performed in America and Europe. He teaches at Universidad de Chile and Pontificia Universidad Católica de Chile.

Kerry Hagan is a composer and researcher working in acoustic and digital media. Hagan is a Lecturer at the University of Limerick, Ireland in computer music, where she is the Course Director for the MA/MSc in Art and Technology. Since 2021, she is the President of the International Computer Music Association.

Patrick Hartono is an Indonesian electroacoustic composer and audiovisual artist whose research focuses on utilizing computer game technology within the context of audiovisual composition. He explores VR technologies, ambisonics sound, sound synthesis (analog/digital), and machine learning through a practice-led research approach to form science-art bound applied to create artworks. The outcomes consist of multi-channel electro-acoustic composition, audiovisual composition, and installation.

Christopher Haworth is Senior Lecturer in Music at University of Birmingham. He researches contemporary and historical electronic musics as they are practiced, theorized, taught and experienced, using a mixture of historical, ethnographic, and data-driven methods, and is a composer of computer music with interests in psychoacoustics, cybernetics and spatial composition. 2019-21 he was PI on the AHRC early career leadership fellowship Music and the Internet: Towards a digital sociology of music.

Tomás Koljatic S. is a Chilean composer and Assistant Professor of the Faculty of Arts of the Pontificia Universidad Católica de Chile. He pursued studies in composition at the Conservatoire de Paris, under the guidance of F. Durieux, C. Ledoux , D. Cohen, L. Naón, T. Mays and K. Haddad. In parallel, he attended Cursus 1 at IRCAM. Cur-rently, he is an academic at the Faculty of Arts of the Pontificia Uni-versidad Católica de Chile, where he teaches music history and analysis.

PerMagnus Lindborg is a composer, sound artist, and researcher in sound perception. He is currently Associate Professor (Sound Art) at the School of Creative Media, City University of Hong Kong, creating installations, films, and concert artworks through SOUNDISLANDS, regularly publishing in journals and conferences. He serves as Asia-Oceania Regional Director and Music Coordinator of ICMA.

亓梦婕 Mengjie Qi Maggie is lecturer at China Conservatory of Music, post-doc research fellow from Central Conservatory of Music, and composer, sound artist and curator. Her music and installation works have been presented at many international festivals. As Internat. Coordinator for MUSICACOSTICA-Beijing, she promotes cultural and musical communication; in 2020, she founded the Ensemble Phoenix Beijing.