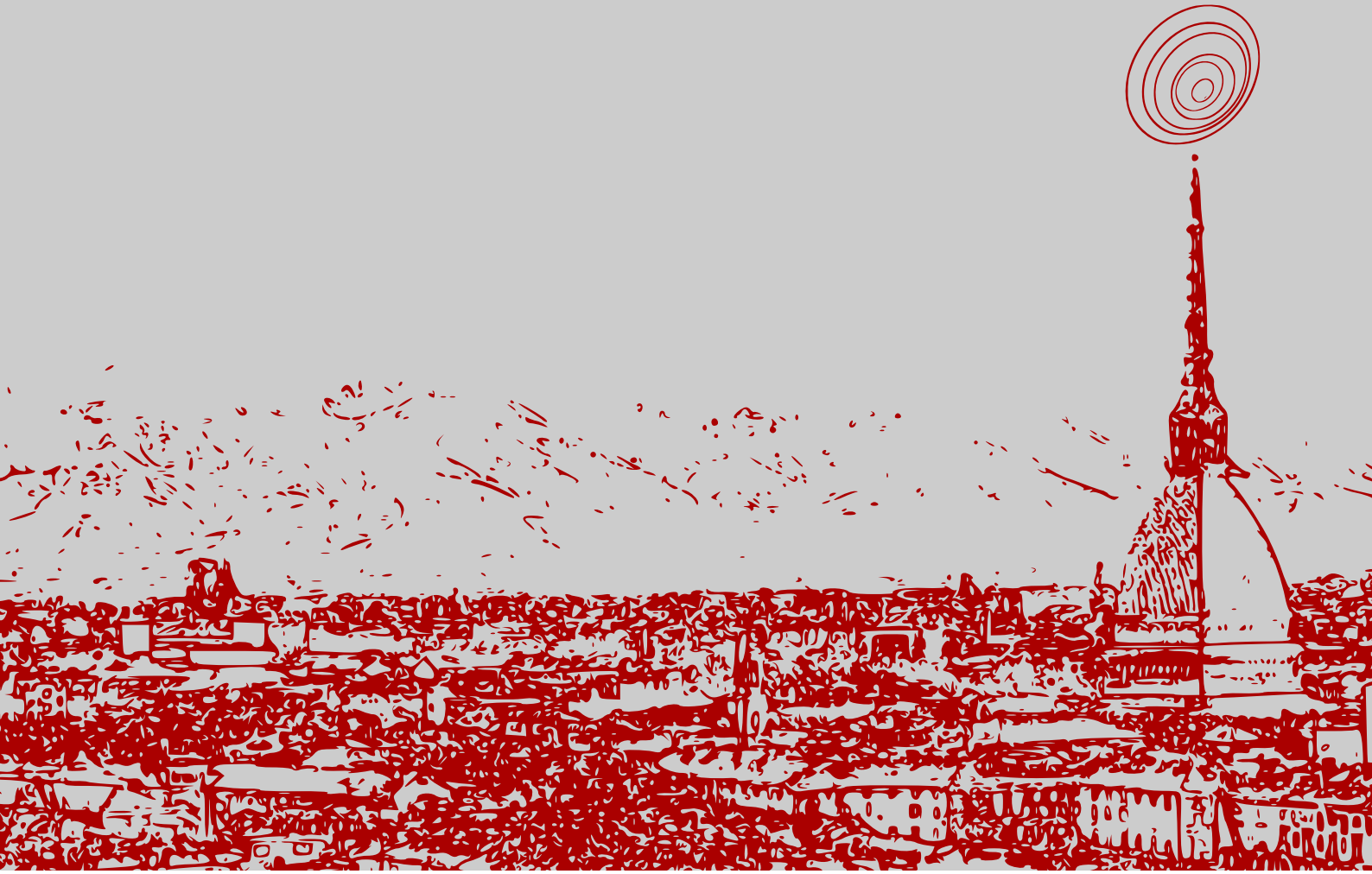
17th Sound and Music Computing Conference

Torino, 24th - 26th June 2020

Proceedings



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SMC 2020

Proceedings of the 17th Sound and Music Computing Conference

Torino, Italy, June 24th – 26th 2020

Simone Spagnol and Andrea Valle, eds.

17th Sound and Music Computing Conference
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Preface

The Sound and Music Computing Conference reaches its 17^{th} edition!

This 17^{th} Sound and Music Computing Conference (SMC 2020) is organized by three institutions from Torino, Italy: University, Polytechnic School and Conservatorio di Musica "G. Verdi". The conference should have taken place in Torino, June $24t^{th}$ – 26^{th}, 2020 as a joint event together with the XXIII Colloquium of Music Informatics (CIM) organized by the Italian Association of Music Informatics (AIMI).

The current COVID-19 situation has forced us to change our plans for this edition. While in agreement with AIMI we decided to postpone the XXIII CIM, together with the SMC steering committee we opted for turning SMC 2020 into a virtual conference. Although this means a certain loss of opportunities in relation to the physical conference, this decision allowed us to keep the yearly scheduling of the SMC conference.

Did we learn anything from COVID-19? In terms of scientific practice, we have all been forced to embrace on-line work. At least we became more acquainted and competent with this kind of resources. While moving the SMC conference to the World Wide Web, we thought that we should try to exploit some possibilities provided by this technological shift. For instance, why keep access to the conference reserved to a closed group of registered participants? Thus, this 2020 edition is open to anyone with an internet connection.

SMC 2020 Topics of Interest include a wide selection of topics related to acoustics, psychoacoustics, technologies for audio and music, audio analysis and synthesis, spatial sound, sonic interaction design, music analysis, performance modelling, and many more. SMC 2020 is an interdisciplinary forum to share music, thoughts, needs and discoveries in this remarkable research topic that brings together art, technology and human perception.

SMC 2020 welcomed two types of contributions:

- Scientific contributions examining all the core topics of the Sound and Music Computing field; these contributions, that have been fully peer-reviewed, are presented as oral talks or posters.
- Music contributions that make use of the possibilities technology offers nowadays to create music in a broad sense.

SMC 2020 received 233 submissions: 97 scientific contributions and 136 musical contributions. Out of them, SMC 2019 features 32 oral presentations, 32 posters, and 26 musical pieces.

SMC 2020 had the help of 110 scientific reviewers to examine all the submissions in order to compile the final Scientific Program. Based on recommendations from the Scientific Committee, the Scientific Chairs have made the final decisions and organized the presentation of the different contributions in the Oral and Poster Sessions.

On the other hand, since the music pieces submitted to the conference were mostly meant for live concerts, we opted for postponing the music review process to the next

edition. For this edition, we decided - in agreement with composers - to deliver part of the submitted fixed-media acoustic works only.

We tried to devise a way to ensure a certain content robustness while still providing a certain degree of interactivity. This edition features both recorded video presentations of the works and live Q&A video chat sessions. Poster presentations are in the form of Skype sessions open to anyone.

In this book you can find the Proceedings of SMC 2020 with all the scientific contributions presented during the conference.

Torino, June 2020
Simone Spagnol and Andrea Valle
on behalf of the SMC 2020 General & Scientific Chairs

Keynotes

Keynote 1

Anna Xambó

Collaborative/Participatory Music Experiences: A Dialogue Between SMC and HCI

Music has been a topic of inspiration in Human-Computer Interaction (HCI) since its beginning in the 1970s– 1980s. SMC has borrowed HCI methods and theories as part of its agenda since its inception. In this keynote presentation, I will reflect on how HCI has inspired my SMC work, focusing on the creation of new collaborative and participatory experiences for music performance. I will present several projects that showcase different interaction approaches to digital musical instrument design: tangible, mobile, wearable, and laptop-based interactions. In turn, I will discuss the implications for the two fields.

Looking forward, we will see how both fields are evolving rapidly and adapting to new socio-technical changes, such as the control of AI, the ubiquitous digital interfaces, and the worldwide hyper-connectivity, to name a few. I will consider how these transformations are shaping new music experiences for collaboration and participation, as well as the potential synergies with HCI perspectives that incorporate ideas from feminism, decolonisation, and sustainability, among others.

About the speaker: Anna Xambó is a Senior Lecturer in Music and Audio Technology at De Montfort University and an experimental electronic music producer. She studied HCI and music technology at Universitat Pompeu Fabra (Barcelona, Spain), and completed her PhD in computer-supported collaboration on interactive tabletops for music performance at The Open University (Milton Keynes, UK). Her passion for sound and music computing kept being nurtured as a postdoctoral fellow at the Center for Music Technology and Digital Media Program at Georgia Tech (Atlanta, GA, USA), postdoctoral research assistant at the Centre for Digital Music, Queen Mary University of London (UK), and Associate Professor in Music Technology at the Norwegian University of Science and Technology (Trondheim, Norway). Her research and practice focus on new interfaces for music performance looking at live coding, collaborative and participatory music systems, and multichannel spatialisation. She has also a special interest in improving the representation of women in music technology, with leading roles in two organisations: WoNoMute (2018-2019, NTNU/UiO) and Women in Music Tech (2016-2017, Georgia Tech).

`www.annaxambo.me`

Keynote 2

Marek Chołoniewski

Sound Space Kinetics

Sound space kinetics presents different forms of sound movement in close and open space. There is a concept of meta instrument, an invisible resonating 3D object with all active and passive elements inside. Exploring selected examples of historical and current sound art projects establishes a specific link between music and other forms of art based on sound.

About the speaker: Marek Chołoniewski. Composer, sound artist, performer, teacher and manager. Head of Electroacoustic Music Studios at the Academy of Music in Krakow and Audiosphere Lab at Intermedia Department of Fine Arts Academy in Kraków. Founder and President of Muzyka Centrum Art Society and Polish Society for Electroacoustic Music PSeME. Since 2011 President of International Confederation of Electroacoustic Music CIME/ICEM. Director of Audio Art Festival in Krakow. Founder of many groups and ensembles, among others: Freight Train, ch&k&k, dizzy kinetics, GrupLab. Author of many projects, instrumental and electroacoustic music, sound and video installations, interactive, space/environment, audiovisual and net-art projects. He received Honorable Award of the Polish Composers Union, Award of the Ministry of Culture and National Heritage, as well as the Independent Project grant of the CEC ArtsLink in New York.

`www.studiomch.art.pl`

Keynote 3

Pierre Alexandre Tremblay
Beautiful Mess: tales of in-between-ness in SMC research

In this presentation, Pierre Alexandre Tremblay will share his experience of musiking with technology, embracing the richness and plurality of approaches to research in Sound and Music Computing.

Part reflective journal, part love song, part recipe book, this talk will offer the perspective from Tremblay's music practice research, with examples from early ideas to his current projects. Artists will be cast as agents of chaos, and a model will be proposed where they contribute actively to many other well-established disciplines, between and beyond their respective areas.

SMC research sits intrinsically at the crossings of studio music production, (psycho) acoustics, sound design, DSP, data science, but tales of its practice show a rich world beyond such schematised inter-disciplinary accounts. Therefore, Pierre Alexandre will argue that this in-between-space in itself is worth both defending and celebrating. Reflecting on the affordances and challenges of such approach, he will hope to encourage us to be brave and embrace the fertility of crosspollination and uncertainties of this beautiful mess.

About the speaker: Pierre Alexandre Tremblay (Montréal, 1975) is a composer and an improviser on bass guitar and sound processing devices, in solo and within various ensembles. He is a member of the London-based collective Loop, and his music is also released on Empreintes DIGITALes and Ora.
He formally studied composition with Michel Tétreault, Marcelle Deschênes, and Jonty Harrison, bass guitar with Jean-Guy Larin, Sylvain Bolduc, and Michel Donato, analysis with Michel Longtin and Stéphane Roy, studio technique with Francis Dhomont, Robert Normandeau, and Jean Piché.
Pierre Alexandre is Professor in Composition and Improvisation at the University of Huddersfield (UK), where he anchored the Fluid Corpus Manipulation project. He previously worked in popular music as producer and bassist, and has a keen interest for creative coding. He enjoys spending time with his family, drinking oolong tea, gazing at dictionaries, reading prose, and taking long walks.

`www.pierrealexandretremblay.com`

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