HCI International 2023
23-28 July 2023,
AC Bella Sky Hotel and Bella Center, Copenhagen, Denmark

Call for Participation
Interactive Technologies for Analysing and Visualizing Musical Structure

Sunday, 23 July 2023 - 08:30-12:30

Organizer: David Meredith
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Aim of the workshop

We are seeking high-quality submissions reporting on original, previously unpublished research within the area of interactive technologies for analysing and visualizing musical structure. Analysing and visualizing the structure of musical works can play a fundamental role in facilitating and enhancing the understanding and appreciation of those works among listeners, performers, composers and musicologists. For example, a performer who is learning to play a piece can benefit from having an effective visual representation of a coherent, satisfying and meaningful way of understanding the piece, perhaps in the context of other music in the same style or genre. Similarly, a concert-goer who is about to hear a piece for the first time might benefit from being presented first with an introduction to the piece, enhanced with visualizations of the work's structure and the way the work relates to other works from the same period, in the same genre or by the same composer.

If listeners, performers, composers and musicologists have access to usable and available software that automatically generates insightful analyses from digital encodings of musical works, along with high-quality encodings of the works in which they are interested, then insight-giving visualizations of the music's structure might be readily generated as required. Moreover, users might want to interact in various ways with such a generated analysis through a visualization that serves as a graphical user interface to the analysis. For example, a user might wish to hear certain themes or chords identified by the analysis, or compare part of one piece with part of a different piece that the automatically generated analysis has identified as being related. Users may also want to customize and modify a generated analysis so that it more accurately reflects how they personally interpret the piece.

Such use cases present challenging problems for software engineers and user-interface designers. The software that generates the analyses must carry out computationally

expensive processes (e.g., pattern discovery) in practical running times if the software is to be usably responsive. Different types of users may require different types of user interfaces, affording different types of interactions and visualizations that match, for example, their level of musical expertise, the aspects of the music in which they are interested, and the specific tasks for which the software is being used.

Analysis and visualization of musical structure are especially important when attempting to gain knowledge about musical traditions, genres and repertoires with which one is unfamiliar. Effective visualizations (supported by appropriate representations, encodings and data-structures) are also crucial when communicating the knowledge that has been gained to a target audience. Such a situation occurs when music from one culture is performed to an audience consisting largely of people from a different culture—for example, when Persian or Indian music is played to a European audience that is primarily familiar with classical music. However, the problem of effectively communicating the meaning of a piece of music to an audience that is unfamiliar with the cultural or stylistic context within which the piece was created can even arise when the music and the audience share the same culture—for example, an audience that listens almost exclusively to Western popular music may find it hard to appreciate a concert of Western classical music.

Expected workshop outcome

We expect that the workshop will bring together musicologists, ethnomusicologists, software engineers and computer scientists, HCI experts, composers, musicians, and librarians and archivists interested in digitizing musical sources. By bringing together such a wide variety of experts from different domains, we expect that the event will initiate exciting inter-disciplinary collaborations that could lead to future large-scale collaborative projects. We expect that the workshop will serve to strengthen the identity of an emergent multi-disciplinary research community whose common goal is to develop technologies that can help a variety of types of users to better understand the music in which they are interested, interact more effectively and enjoyably with that music, and more effectively communicate knowledge about that music to a broader audience. We expect that the workshop will sharpen our understanding of what the main challenges and problems are in this domain and lay down the foundations for a roadmap for future research in the area. We also expect that this will be the first of a series of annual workshops on this topic.

Workshop topics

This workshop will focus on the technical and interaction-design challenges involved in building effective, usable technologies for generating, visualizing and interacting with analyses of musical works. It will also welcome contributions that illustrate how such technologies can deepen our understanding of works and make them accessible to broader audiences. Contributions will also be welcome that address the challenging issues inherent in creating, curating and disseminating collections of high-quality encodings of (possibly very large) musical works, since the availability of such collections is necessary if a wide variety of users are going to be able to study and interact with the music in which they are interested.

Workshop agenda

Time	Presentation	
08.30 – 08.50	Ozan Baysal, Recep Gül, Yusuf Can Şeftali	A Virtual Guide to the Makam Universe
08.50 – 09.10	Chenyu Gao, Tom Collins	The Pendular Graph: Visualising Hierarchical Repetitive Structure in Point-set Representations of the POP909 Music Dataset
09.10 – 09.30	Olivier Lartillot	Dynamic Visualisation of Fugue Analysis, Demonstrated in a Live Concert by the Danish String Quartet
09.30 – 09.50	Ali Nikrang, Maarten Grachten, Martin Gasser, Harald Frostel, Gerhard Widmer, Tom Collins	Music Visualisation and its Short-term Effect on Appraisal Skills
09.50 – 10.10	Michael Zöllner, Jan Gemeinhardt, Moritz Krause, Markus Bosl, Dirk Widmann	Understanding a Symphony Orchestra by Reexperience in Virtual Reality
10.10 – 10.30	Johannes Hentschel, Martin Rohrmeier	The Slice-Group-Analyze Pipeline: A Flexible Visualization Framework for Comparative Corpus Studies
10.30 – 11.00	Coffee break	
11.00 – 11.20	Klara Znidersic, Iris Y. Ren, Anja Volk, Matevz Pesek	Preliminary Report on Gathering a Larger Annotated Dataset for Pattern Discovery Tasks
11.20 – 11.40	Felipe Martins, Mark Gotham	“TiLiA”: A Timeline Annotator for All
11.40 – 12.00	Kieran Jayes, Seán Doherty, James McDermott	A Prefix Tree-Based User Interface for Exploring Abstract Structure in Irish Folk Tunes
12.00 – 12.20	Mafalda S. Nejmeddine, Aaron Carter Enji	Computer-Assisted Analysis and Visualization of 18th-Century Portuguese Keyboard Music

Extended abstracts and further details about the workshop programme are available here.

Guidelines to prospective authors

Prospective authors should submit their paper proposals in PDF format through the HCII Conference Management System (CMS). Proposals should be **no more than 2 A4 pages** long in total, in any format, with a minimum font size of 11 point and margins no less than 1.5 cm. Authors of submissions accepted *as posters* will be required to create a digital poster to be presented during a 1-minute, 1-slide presentation in the "poster craze" session. Authors of papers selected *for oral presentation* will be required to prepare a 15-minute presentation to be given during the workshop. Authors are welcome to submit extended versions of accepted workshop papers separately for consideration for inclusion in the Late Breaking Work proceedings (see https://2023.hci.international/latebreakingpaper.html for details).

Workshop deadlines

Submission of workshop paper proposals	8 May 2023
Authors notified of decisions on acceptance	22 May 2023
Finalization of workshop organization and registration of participants	31 May 2023

Workshop organizer

David Meredith is an Associate Professor in the Department of Architecture, Design and Media Technology at Aalborg University, Denmark. He has worked within the field of computational music analysis for over 30 years and has over 70 publications in the area, including the edited book, *Computational Music Analysis* (Springer, 2016). His main contributions to the field have been the design and implementation of novel algorithms for pattern discovery and analysing tonal structure, some of which have been implemented in commercial music software. From 2013-2016 he was principal investigator at Aalborg University on the EU project, *Learning to Create* (FET no. 610859). Since 2022 he has been editor-in-chief of the Journal of New Music Research. He obtained his doctorate (D.Phil.) from Oxford University in and has bachelor and masters degrees from Cambridge University.
Institution web page: https://vbn.aau.dk/en/persons/119171
Personal web page: https://www.titanmusic.com
Google Scholar page: https://scholar.google.com/citations?user=bs-237cAAAAJ

Useful links and References

HCI International 2023 Conference: https://2023.hci.international/
11th International Conference on Culture and Computing: https://2023.hci.international/c&c
International Society for Music Information Retrieval: https://ismir.net/
Journal of New Music Research: https://www.tandfonline.com/journals/nnmr20
Sound and Music Computing Network: https://smcnetwork.org/

Registration regulation

Attendance in the workshops will be available as ‘in-person’ only. Workshops are ‘closed’ events, i.e. only authors of accepted workshop proposals, registered for the specific workshop, will be able to attend.

A registration fee of $75 is applicable for workshop participants. Workshop participants who wish to attend the Conference will need to also register for the Conference.

The total number of participants per workshop cannot be less than 8 or exceed 25.