

Intelligent Music Interfaces for Listening and Creation

Peter Knees

TU Wien, Faculty of Informatics
Vienna, Austria
peter.knees@tuwien.ac.at

Markus Schedl

Johannes Kepler University
Linz, Austria
markus.schedl@jku.at

Rebecca Fiebrink

Goldsmiths, University of London
London, UK
r.fiebrink@gold.ac.uk

ABSTRACT

Digital music technology plays a central role in all areas of the music ecosystem. For both, music consumer and music producers, intelligent user interfaces can be a means to improve access to sound and music. The second workshop on Intelligent Music Interfaces for Listening and Creation (MILC) provides a forum for the latest developments and trends in intelligent interfaces for music consumption and production by bringing together researchers from areas such as music information retrieval, recommender systems, interactive machine learning, human-computer interaction, and composition.

CCS CONCEPTS

• **Applied computing** → **Sound and music computing**; • **Information systems** → **Multimedia and multimodal retrieval**; • **Human-centered computing** → **Human computer interaction (HCI)**.

KEYWORDS

Music Listening, Music Creation, Intelligent User Interfaces

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1 WORKSHOP TOPIC AND GOALS

Today's music ecosystem is permeated by digital technology – from recording to production to distribution to consumption. Intelligent technologies and interfaces play a crucial role

during all these steps. On the creation side, tools and interfaces like new sensor-based musical instruments or software like digital audio workstations (DAWs) and sound and sample browsers support creativity. Generative systems can support novice and professional musicians by automatically synthesizing new sounds or even new musical material. On the consumption side, tools and interfaces such as recommender systems, automatic radio stations, or active listening applications allow users to navigate the virtually endless spaces of music repositories. Both ends of the music market therefore heavily rely on and benefit from intelligent approaches that enable users to access sound and music in unprecedented manners. This ongoing trend draws from manifold areas such as interactive machine learning, music information retrieval (MIR) – in particular content-based retrieval systems –, recommender systems, human computer interaction, and adaptive systems, to name but a few prominent examples.

Following the successful first edition held at IUI 2018 [3], the 2nd Workshop on Intelligent Music Interfaces for Listening and Creation (MILC 2019) brings together researchers from these communities and provides a forum for the latest trends in user-centric machine learning and interfaces for music consumption and creation.¹

Topics relevant to MILC include music and audio search and browsing interfaces; music learning interfaces; music recommender systems; machine learning for new digital musical instruments; gestural interfaces for music creation and listening; accessible music making technologies; intelligent systems for music composition; and user modeling for personalized music interfaces, among others.

2 WORKSHOP PROGRAM

In the area of music education, Pauwels and Sandler present a web-based system for suggesting new practice material based on chord content [4]. To facilitate access to sound repositories, Bruford et al. propose a visual interface for drum loop library navigation [1] while Smith et al. explore a hybrid recommendation system [5]. Carr and Zukowski propose a tool for discovery of interesting sections in large volumes of audio generated by neural synthesis [2]. Thio et al. present a template designed to demonstrate symbolic musical machine

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¹<https://milc2019.github.io>

learning models on the web [7]. Stine presents an interactive sound generator based on mappings from the transcriptions of environmental sounds to other sound corpora, thereby creating immersive electronic music [6]. In the workshop keynote speech, Masataka Goto talks about intelligent music interfaces based on music signal analysis.

3 ORGANIZERS

Peter Knees is an assistant professor of the Faculty of Informatics, TU Wien, Austria. In the past 15 years, he has been an active member of the Music Information Retrieval research community, reaching out to the related areas of multimedia, text IR, and recommender systems. Apart from serving on program committees of major conferences in these fields, he has previously organized several workshops on the topics of media retrieval: Advances in Music Information Research (AdMIRe) series from 2009 to 2012, Adaptive Multimedia Retrieval (AMR) in 2010, Workshop on Social Media Retrieval and Analysis (SoMeRA) at SIGIR 2014 and ICDM 2015, Workshop on Collaborating with Intelligent Machines: Interfaces for Creative Sound at CHI 2015, Workshop on Surprise, Opposition and Obstruction in Personalized and Adaptive Systems (SOAP) at UMAP 2016 and 2017, 1st MILC workshop at IUI 2018, and 1st Austrian Workshop on Music Information Retrieval (2018).

Webpage: <https://www.ifs.tuwien.ac.at/~knees/>

Markus Schedl is an associate professor at the Institute of Computational Perception of the Johannes Kepler University Linz. His main research interests include web and social media mining, recommender systems, information retrieval, multimedia, and music information research. He (co-)authored more than 200 refereed conference papers and journal articles. He can look back at a history of workshop co-organization activities, i.e., the Advances in Music Information Research (AdMIRe) series (2009–2012), Adaptive Multimedia Retrieval (AMR) in 2010, Search and Mining User-generated Contents (SMUC) in 2011, Workshop on Social Media Retrieval and Analysis (SoMeRA) at SIGIR 2014 and ICDM 2015, Theory-Informed User Modeling for Tailoring and Personalizing Interfaces (HUMANIZE) at IUI 2017, 1st MILC at IUI 2018, and 1st Austrian Workshop on Music Information Retrieval (2018).

Webpage: <http://www.cp.jku.at/people/schedl/>

Rebecca Fiebrink is a Senior Lecturer at Goldsmiths, University of London. Much of her research focuses on the use of machine learning as a creative tool. Fiebrink is the developer of the Wekinator, open-source software for real-time interactive machine learning whose current version has been downloaded over 20,000 times. She is the creator of a MOOC titled “Machine Learning for Artists and Musicians,” which launched in 2016 on the Kadenze platform. She

has participated in program committees for CHI, Creativity and Cognition, ISMIR, and others, and has co-Chaired the International Conference on New Interfaces for Musical Expression. She has previously led several related workshops, e.g., on Human Centred Machine Learning at CHI 2016 and 2019, Mixed-Initiative Creative Interfaces at CHI 2017, Machine Learning for Creativity and Design at NIPS 2017 and 2018, and MILC at IUI 2018.

Webpage: <https://www.doc.gold.ac.uk/~mas01rf/>

4 PROGRAM COMMITTEE

- Baptiste Caramiaux, IRCAM
- Mark Cartwright, NYU
- Bruce Ferwerda, Jönköping University
- Fabien Gouyon, Pandora Inc.
- Masataka Goto, AIST
- Dietmar Jannach, AAU Klagenfurt
- Vikas Kumar, University of Minnesota
- Cárthach Ó Nuanáin, melodrive Inc.
- Adam Roberts, Google
- Gabriel Vigliensoni, McGill University
- Richard Vogl, TU Wien

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