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The Odd Couple

Real-time improvisation between a human pianist and an AI-inspired system

Applications of the latest AI models in music are primarily aimed at music composition and production. Companies such as Udio, Boomy, or Suno promise users they, too, can compose songs with just a few clicks - doing away with the need for musicianship or musicians. We propose to showcase an alternative approach to music AI - AI as a partner in music making; AI that is capable of improvising, live and in real-time in dialogue with a human musician. Bringing AI into the concert hall as an 'improvising partner' raises some important questions: what are the musical 'abilities' of AI and how do they relate (or not) to the way human musicians perform? Where is musical agency located when an AI system generates music, live and in real-time, under the guidance of a human supervisor? What is the nature of the musical dialogue between a human performer and an AI improviser, and how is this related to an analogous human-human improvisation.

This artistic research is a collaboration between pianist-improviser David Dolan and composer-programmer Oded Ben-Tal. Dolan's improvisation is rooted in Western tonal, modal and, to some extent, post-tonal musical language and tradition. Ben-Tal, on the other hand, is a composer, not a performer, and his musical idiom is non-tonal. Melding these two different aesthetic stances and creative practices is one of the main challenges in this artistic research. For Ben-Tal, this means implementing a system that can handle the moment-to-moment generation of music, freeing him to utilise his skills as a composer to listen, evaluate, plan ahead, and then influence the enfolding generative processes. It also means finding ways of imprinting his compositional thinking into a real-time system that 'listens' and responds. This is research where artistic and technical challenges are closely integrated. For Dolan, whose concert activity includes performing improvisations in chamber music context (with human partners...), the duo with Oded's AI-inspired system was an intriguing challenge which required developing new approaches to listening since the way the system 'listens' lacks key components that we take for granted. For example, patterns of tension and release or the plasticity of musical times. Also missing are the embodied cues performers are able to exchange.

The way the AI system 'listens' is shaped by the capabilities of Music Information Retrieval techniques, the constraints of real-time processing, and ideas about what is musically important. The latter are determined by Ben-Tal's compositional thinking and Dolan's approach to improvisation. The sounds the system contributes to the duo, which uses the numerical outputs of the 'listening' process to shape generative processes, need to be relevant to the current music the pianist is playing (which is unknown until the moment it happens). Equally important - the generated material needs to be one that Ben-Tal considers compositionally good. Attaining this melding of musical practices, approaches and idioms required a sustained process of artistic exploration in the rehearsal studio. Ben-Tal has been revising and refining

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his system for more than two years. During that period, we also gradually discovered the creative possibilities in this meeting of the old - 18th and 19th century keyboard improvisation practices – and the new: sound synthesis, machine listening, and Artificial 'Intelligence'.

The performance will follow a format we trialled before: our duo improvisations interspersed with non-technical explanations about the system, our research process, and the implications of the work. This allows the audience to gain an understanding of this artistic research by experiencing the music and also by gradually learning more about what we do and how we do it. Note that together with cellist Adian Brendel, David Dolan is also submitting a proposal that focuses on a comparative case of human-human duo improvisations. If both are accepted and can be scheduled in the same session, we will include a discussion comparing the two cases.

Examples:

Video illustrating this work <https://youtu.be/hg-qqs8EdXg>

Excerpt from a concert <https://youtu.be/ztPmrMBfeFU>

Selection of studio recordings <https://on.soundcloud.com/>



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David Dolan is an international concert pianist, researcher and educator. He has devoted part of his career to reviving classical improvisation art and its performance applications. In his worldwide solo and chamber music performances, he returns to the tradition of incorporating extemporisations within repertoire in embellished repeats, eingangs & cadenzas, as well as improvised preludes, interludes and fantasies.

His research focuses on applying expressive narrative and creativity to repertoire and improvised performances (solo & ensemble), in close collaboration with Imperial College, London.

Professor of classical improvisation and its applications to solo and chamber music performance at the Guildhall School of Music and Drama in London, he heads the Centre for Creative Performance and Classical Improvisation. He also teaches at the Yehudi Menuhin School and conducts masterclasses and workshops in major music centres and festivals worldwide.

Oded Ben-Tal is a composer-researcher working at the intersection of music, computing, and

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cognition. His work addresses the evolving landscape of music composition and performance in the digital age, exploring how technology shapes artistic expression. Since 2016 he has been exploring the application of AI in music: using AI to generate compositional material and developing AI-inspired systems for live, interactive performances. His work was funded by grants from the UK's Arts and Humanities Research Council and most recently by the Volkswagen Stiftung in collaboration with the Max Planck institute for Empirical Aesthetics. In addition to his compositional achievements, Ben-Tal - Associate Professor at Kingston University - is an influential educator. He has taught at various institutions, where he focuses on fostering creativity and critical thinking in music. His pedagogical approach emphasises the importance of interdisciplinary collaboration and encourages students to engage with both the theoretical and practical aspects of music.