

Harmony & Dissonance: Generative AI in Music and the Arts

in the series Musik & Mathematik

Symposium of Focus Area (Inter)Mediation. Music – Mediation – Context

Inter-University Organization Science & Arts, Paris Lodron University Salzburg/Mozarteum University Salzburg

20 June 2024

Villa Vicina (Stiftung Mozarteum Salzburg)

Schwarzstraße 30, 5020 Salzburg

10.00–10.15

Opening and welcoming speech by the head of the Inter-University Organization Science & Arts,
Paris Lodron University Salzburg/Mozarteum University Salzburg Thomas Ballhausen

10.15–10.45 Uhr

Marco Döttlinger: *Emergent properties – Composition in intra-action*

10.45–11.15 Uhr

Stephanie Meisl: *Schiele's Ghost*

Moderation: Andreas Bernhofer

11.15–11.45 Uhr: COFFEE BREAK

11.45–12.15 Uhr

Jordi Pons: *Reinventing how we create audiovisual content*

12.15–12.30 Uhr

Martin Losert: *Announcement Sweet Spot. OpenGarden – Neobeyond*

Moderation: Katarzyna Grebosz-Haring

12.30–13.45 Uhr: LUNCH BREAK

13.45–14.15 Uhr

Noah Martin: *Artificial intelligence and copyright*

14.15–15.45 Uhr

Peter Tschmuck: *Business Models for AI-based Music Applications and Legal Challenges*

Moderation: Arne Bathke

15.45–16.15 Uhr: COFFEE BREAK

16.15–17.00 Uhr

Panel discussion with the symposium speakers

Moderation: Christine Bauer

17.00: Transfer to Mirabell Gardens

17.30 Uhr: Martin Losert: Opening *Sweet Spot. OpenGarden – NEOBEYOND* with sound installations by:

Andreas Bäuml, Alexander Bauer, Matthias Brandt, Johannes Brömmel, Marco Döttlinger,
Emma Ebmeyer, Samuele Ferrari, Lotte Krüger, Nicolas Speda, Verena Wusatiuk

Afterwards: Finale and visit from *Sweet Spot. OpenGarden – NEOBEYOND* in the Mirabell Gardens

Marco DÖTTLINGER

Composer, sound- and installation artist, Mozarteum University Salzburg/University of Music and Performing Arts Vienna – mdw, Salzburg/Vienna, Austria

Emergent Properties – Composition in Intra-Action

Today artists are working within a complex assemblage of human and algorithmic agencies. Machine learning algorithms stimulate a critical and creative engagement with concepts of musical creation, also challenge the traditional concept of authorship by underlining the entanglement and interdependence of human-machine collaboration. The main aim of my current artistic projects is to explore such emergent properties of complex settings of abstractions and adaptive processes in the form of feedback loops between algorithms and humans. My talk aims to present some personal strategies and work examples.

Marco Döttlinger is an Austrian composer, sound- and installation artist. He studied composition, computer music and music theory in Salzburg, Paris and Basel and performs as a member of NAMES – New Art and Music Ensemble Salzburg. Currently he lectures at SEM – Studio for Electronic Music at Mozarteum University Salzburg and works as Artistic Researcher at mdw – University for Music and Performing Arts Vienna. His instrumental compositions, electro-acoustic works and mixed-media installations are primarily concerned with micro-temporal shifts on the boundary between flow and stasis. Often in the context of generative and algorithmic procedures in the arts.

www.doettlinger.org

Stephanie MEISL

Media artist, D#AVANTGARDE – new technology, art and creativity, Vienna/Salzburg, Austria

Schiele's Ghost

“Schiele’s Ghost” is a machine learning project initiated in 2020 by media artist Stephanie Meisl and artist Martin Gasser. The project serves as an artistic use case to explore, explain and communicate the potential and risks of new technologies. In constant progress, the project questions the meaning of being an artist in the context of controversial new technologies such as artificial intelligence (AI). From the very beginning, Schiele’s Ghost has addressed social challenges around data and copyright. In addition, the project examines digital presence and the role of blockchain technology in the art world. However, the artist’s key theme is the exploration of the emotionality of AI-generated images. In the latest project, ‘Schiele’s Ghost Memories’, the artist searches for intimate moments between the artist and the subject before the subject is digitally transformed into a work of art.

Stephanie Meisl is a media artist from Salzburg who lives in Vienna and has been intensively following the development from analog to digital media and modern technologies since 1997. After completing her Master of Art in Communication in the USA and a 2-year stay in Paris, she co-led the film production and advertising agency C'QUENCE in Vienna for eight years. In 2003, she joined the media art festival Schmiede Hallein and since 2019 has focused on exploring innovative technologies such as AI, VR and blockchain art. Her artistic approach was honored with the Media Art Prize of Salzburg in 2021, and the Special Prize for Digital Literacy of the Vienna Business Agency in 2023. In 2020, together with Sarah Scherer and Scharmien Zandi, she founded the artist collective D#AVANTGARDE, which specializes in the intersection of new technologies, art and creativity. In 2023, together with Andreas Fraunberger, she expanded the D#AVANTGARDE genAI meetup community in Vienna with a focus on AI in the creative industries. Stephanie Meisl is a keynote speaker, speaks on podcasts and panels about AI, art and the creative industries, and leads workshops. D#AVANTGARDE connects visionary artists with the creative industries who are passionate about using the latest AI technologies to push boundaries and explore new forms of digital art. The collective brings together artists and tech-savvy professionals to create and redefine meaningful connections between art, new technologies and the creative industries.

www.davantgarde.xyz | <https://linktr.ee/s.myselle>

Noah MARTIN

SUISA – Swiss Cooperative Society for Music Authors and Publishers, Zurich, Switzerland

Artificial intelligence and copyright

Copyright law, which protects works of literature and art, is based on a principle that has always applied: the mere discovery (of what nature has created) cannot be protected; only what has been created by humans can be protected. With the invention of AI, however, a new player emerged, subsisting alongside nature and humans. The creative process can now be delegated: Humans provide the idea (prompt), AI creates, humans discover. But what does this mean for copyright? This speech will take a closer look at the possible effects of generative AI on the copyright protection and its limitations. Technical and cultural progress are at odds with each other – indeed a balancing act in a class of its own.

Noah Martin studied law at the University of Basel. Following his studies, he dedicated himself to a dissertation project funded by the Swiss National Science Foundation. Until January 2022, he scientifically investigated the requirements for protection under copyright law and obtained his doctorate in November 2022. Since February 2022, he is in charge of the management and board secretariat at SUISA. In addition, he is responsible for topics such as artificial intelligence and NFT at SUISA.

www.suisa.ch/en/

Jordi PONS

Researcher, Stability AI, Barcelona, Spain

Reinventing how we create audiovisual content

Stable Audio 2.0 is now capable of producing high-quality, full-length music tracks up to three minutes long using natural language prompts. In addition to text-to-audio generation, Stable Audio 2.0 introduces audio-to-audio capabilities, allowing users to upload and transform audio samples through natural language instructions. The model's development is rooted in a licensed dataset from AudioSparx, ensuring ethical use and fair compensation for creators. How might this technology impact the way we create and experience music and audio content?

Jordi Pons is a researcher at Stability AI working on generative models for audio and music. Previously, he was a staff researcher at Dolby Laboratories and received a PhD in music technology, large-scale audio collections, and deep learning at the Music Technology Group (Universitat Pompeu Fabra, Barcelona). He also interned at IRCAM (Paris), at the German Hearing Center (Hannover), at Pandora Radio (Bay Area), and at Telefónica Research (Barcelona).

www.jordipons.me

Peter TSCHMUCK

Department of Popular Music (iPOP), University of Music and Performing Arts Vienna – mdw, Vienna, Austria

Business Models for AI-based Music Applications and Legal Challenges

The use of artificial intelligence in the music business dates back to the 1980s, when David Cope used his Emmy composition programme to let algorithms compose music on their own. After a brief historical review, this presentation will show the monetisation of AI-based music applications through various business models in music recognition, music recommendation and generative music creation. This development has always taken place in the field of tension between the implementation of new business models and the legal framework. The current example of the use of generative music AI will be used to show which conflicts arise and how they can be solved.

Peter Tschmuck is professor for Cultural Institutions Studies at the Department of Popular Music of the University of Music and Performing Arts Vienna with a research focus on music business/industry research and the economics of copyright. He is organizer of the annual Vienna Music Business Research Days, editor-in-chief of the International Journal of Music Business Research and president of the International Music Business Research Association (IMBRA). He teaches courses at the Vienna University of Economics and Business, the University of Basel, the SAE Institutes in the German speaking countries and held a guest-professorship at the James-Cook University in Townsville and Cairns/Australia in 2010.

www.ipop.at/peter-tschmuck

Arne BATHKE is statistics professor and data science program director at the Department of Artificial Intelligence and Human Interfaces, dean of the Faculty of Digital and Analytical Sciences, Paris Lodron University of Salzburg.

He was born in Hamburg, grew up in Northern Germany and Norway. Studied mathematics in Göttingen, spent study time abroad in Italy and the USA, and obtained his doctoral degree in 2000. Afterwards, has worked for 11 years in the United States as statistics professor at the University of Kentucky, where he was also inaugural director of the Applied Statistics Laboratory, a comprehensive statistics consulting facility on campus. His research deals with developing and evaluating new statistical methods, and he has given numerous invited talks, lectures and workshops on five continents. On the other hand, he is also interested in the application and improvement of statistical procedures in interdisciplinary cooperations with colleagues from other fields, from medicine and biology to economics. About half of his more than 100 publications in international journals result from such cooperation projects. He is on the board of the *Austrian Statistical Association* (ÖSG), Editor-in-Chief of *Biometrical Journal*, the flagship journal of the International Biometric Society Regions Germany, Austria-Switzerland, and Italy, as well as on the editorial board of two other international statistics journals (*International Journal of Biostatistics*, *Journal of the American Statistical Association*). Recently, he has been elected *Fellow of the American Statistical Association*, as well as into the *European Academy of Sciences and Arts*.

<https://w-k.sbg.ac.at/en/teammitglied/arne-bathke>

Christine BAUER is Professor of Interactive Intelligent Systems at the Department of Artificial Intelligence and Human Interfaces (AIHI) at the Paris Lodron University Salzburg, Austria. In this role, she is part of the Excellence in Digital Sciences and Interdisciplinary Technologies (EXDIGIT) initiative.

Her research focuses on intelligent technologies that automatically adapt to human preferences and behavior. In this interdisciplinary work, she advances technologies, studies human needs, and investigates the effects of human-technology interaction. Her research focuses on recommender systems, one of the most successful applications of machine learning and artificial intelligence, with a particular focus on the application areas of music and media. Core interests in her research activities are fairness in algorithmic decision-making and multi-method evaluation.

www.christinebauer.eu

Andreas BERNHOFER is university professor for music education/music didactics at the Department of Music Education at the Mozarteum University.

He studied music education, instrumental music education and mathematics in Salzburg. He works on curricular development in the area of teacher training in music education in the Central Cluster (Salzburg/ Upper Austria) and coordinates the music education program for schools “MOZ-ART-ZONE” at the Mozarteum University.

www.moz.ac.at/en/people/music-education-salzburg/andreas-bernhofer

Katarzyna GREBOSZ-HARING is currently a Senior Scientist in the Inter-University Organisation Science and Art at the University of Salzburg and at the Mozarteum University Salzburg. She studied music pedagogy, music therapy, violin and music and movement pedagogy in Poland and Austria, received her doctorate in musicology at the Mozarteum University and habilitated in systematic musicology at the University of Salzburg. She has directed several studies in the field of empirical music/art pedagogy, music psychology and medical research. Her research focusses on systematic-empirical approaches in music research, the clinical and pedagogical application of music and arts as well as the mediation of music. She is a member of various international organisations, e.g. the Royal Society for Public Health (RSPH) or the European Society for the Cognitive Sciences of Music (ESCOM), a reviewer for specialist journals, co-director of the Salzburg Institute for Arts in Medicine (SIAM), co-chair of the Music & Medicine and Music & Mathematics lecture series and deputy chair of the Association of Friends of Child and Adolescent Psychiatry in Salzburg, Austria.

<https://w-k.sbg.ac.at/en/teammitglied/katarzyna-grebosz-haring>

Martin LOSERT is professor for instrumental and vocal pedagogy at the Mozarteum University, since 2019 he is head of the Department of Music Pedagogy Salzburg as well as the program area “(Inter)Mediation – Music – Mediation – Context” at the inter-university institution Science & Art.

Martin Losert studied school music, DME (instrumental pedagogy), KA (concert subject) and concert examination saxophone (with Johannes Ernst) at the Berlin University of the Arts and with the help of a DAAD scholarship at the Conservatoire de Bordeaux Jacques Thibaud (with Jean Marie Londeix and Marie-Bernadette Charrier) as well as political science at the TU Berlin and musicology at the FU Berlin. He received his doctorate in music education in 2010 on the tonic-do method with Prof. Dr. Ulrich Mahlert and was a research assistant at the Berlin University of the Arts from 2004 to 2012. From 1994 to 2012, he taught continuously at various music schools and as a freelance instrumental pedagogue in Berlin. His previous scientific publications dealt with relative solmization, music didactic conceptions, improvisation, happiness and instrumental teaching, interpretation, movement learning on the instrument, music playing, conscious listening, mediation of contemporary music as well as aesthetic education. His artistic focus is on contemporary music and free improvisation. He is co-founder of the ensemble mosaik Berlin and has given concerts in Europe, Asia and South America.

www.moz.ac.at/en/people/music-education-salzburg/martin-losert