A-MINT / Alex Braga (IT), © Alex Braga

ARS ELECTRONICA 2020

Festival for Art, Technology & Society

S+T+ARTS

AI×MUSIC

European Commission

The AIxMusic Festival, a S+T+ARTS flagship event, is organised by Ars Electronica and the European Commission.

AIxMUSIC

Last year's launch of the AIxMusic Festival at the extraordinary site of St. Florian Monastery was a huge success. It proved to be a promising starting point for a platform that doesn't only address important issues on the ethical and creative dimensions of artificial intelligence, but also brings together great minds from a variety of disciplines on an international scale. As a forerunner and early adopter of technology, music is the ideal medium to spark a debate around these topics. Thus, for the second time, Ars Electronica is organizing the AIxMusic Festival in collaboration with the European Commission as part of the STARTS initiative. In 2019, the program was focused on artistic improvisation through artificial intelligence to provoke human encounters and emotions, and to giving a broad overview of the historical and theoretical dimensions involved in the interplay of music, composition and technological progress.

This year, the AIxMusic Festival provides deep insight into the latest research and artistic practices developed in conjunction with artificial intelligence, with special attention to its potential to facilitate networked remote collaboration among musicians. In light of the difficult situation presented by coronavirus, digital information and communication tools became crucial solutions for artists to interact and perform at all. However, it is also clear that artificial intelligence harbours even greater possibilities for a networked approach to music, which is why Ars Electronica wants to contribute to the steady research and development of the field, by actively encouraging interdisciplinary experiments with this technology. Due to the hybrid structure of the festival this year, the program includes on-site performances in Linz and other locations worldwide that will be streamed or showcased entirely online. The online platform invites different professionals — artists, musicians, composers and researchers — to discuss human-machine interaction alongside concerts and performances, conferences, workshops and online exhibitions.

THE MAIN GOALS OF THE AIxMUSIC FESTIVAL ARE:

_ to bring together artists, creators, computer scientists, philosophers, industry people and policymakers.
_ to explore the complex and fascinating relationships between culture and technology.
_ to celebrate the human spirit, creativity and ingenuity, as they find their expressions in the arts, as well as in science and technology.
_ to better understand the impending disruptions and forces that will result from new developments, and the increasing presence of autonomous digital systems.
_ to develop the necessary skills and strategies to stay ahead and in control of ongoing changes, especially as relates to new applications of machine learning in many areas of our daily life.
_ to comprehend and strengthen the synergies and potentials of STARTS (Science Technology and Arts) collaborations as a source for discovery and innovation.
_ to initiate new ideas and alliances towards a specifically "European way" for a culture and humanity-driven development of AI technologies and applications.

ARS ELECTRONICA GARDEN

BERKELEY

AI×MUSIC

The Center for New Music and Audio Technologies (CNMAT), University of California, Berkeley (US)

Machine Creativity at CNMAT

Hybrid-Performance, Machine Listening, Computer-Assisted Music Orchestration, and Audio-Driven VR Environments

CNMAT is dedicated to multidisciplinary research and the creative use of sound, linking the concert hall to the laboratory. Our center creates new works of music/art as well as researches, builds and distributes software tools at the intersection of AI and music. The projects presented in this garden focus on machine listening for hybrid-performance (analysis, extraction and application of parametric data from live sound),music information retrieval for creation (analysis, extraction, and application of data from audio files), as well as concepts related to composable algorithms that empower machines with varying degrees of autonomy for creative decision making.

Edmund Campion, composer and director, CNMAT
Carmine Cella, lead researcher, CNMAT
Claudia Hart, media artist and CNMAT collaborator
Jeffrey Lubow, music systems designer, CNMAT
Andrew Blanton, media artist and percussionist
Jon Kulpa, Composer, sound and media artist

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Alice Unchained

GARDEN PROFILE

FORMATS
- ○ Exhibition
- ○ Lecture/Conference/Talk
- ● Workshop
- ○ Journey
- ● Performance/Concert/Event
- ● Film/Animation

COMMUNICATION STRATEGIES
- ○ Social Media
- ● Online participatory tools
- ● Participatory virtual environments
- ● On-demand content
- ○ Experimental tools
- ● Streaming

ARS ELECTRONICA GARDEN

BRUSSELS

AI×MUSIC

Centre for Fine Arts (BOZAR) (BE)

Genetic Biotech Through the Eyes of Artists

Modern biotechnology is developing very quickly. In Prometheus' footsteps, we use new biological tools to transform our healthcare and well-being. The latest CRISPR CAS9 gene technology can permanently erase, weaken or strengthen hereditary properties and add new ones, leading to a fundamental transformation of man as an evolutionary species. In the future, researchers may develop personal medications and therapies that stop us from feeling fatigue or pain, or babies with the DNA of three people that may have been made resistant to COVID19. But these applications are not without danger. Some activists and critics point to the possible social and ethical consequences: what if only the super-rich can make their children more athletic and intelligent? The context of necessary scientific developments and the global COVID19 crisis provides the ideal momentum for public debate on genetic modification. The Flemish Institute for Biotechnology (VIB)—a research institute for the life sciences in Flanders, BE—investigates the fundamental molecular mechanisms of life and how complex biology underlies both health and disease.
Together with BOZAR, GLUON and the artists Kuang-Yi Ku & Sandra Lorenzi (Studiotopia Programme), VIB takes up the challenge to make their cancer research and the use of CRISPR CAS9 technology better known, more negotiable and supported by the general public.
BOZAR will also be part of the AIxMusic Festival. Live coding expert and drummer Dago Sondervan and multi-instrumentalist Andrew Claes team up for an experimental exploration of artificial intelligence in music performance. Armed with an arsenal of specifically developed tools and applications, the duo will train a virtual agent towards musical autonomy and realtime interaction, becoming a trio along the way.

BOZAR LAB
The BOZAR LAB is a space dedicated to the reflection on links between art, society, technology and sustainability in the Centre for Fine Arts, Brussels (BOZAR).

Centre for Fine Arts (BOZAR), Brussels
Vlaams Instituut voor Biotechnologie (VIB)
Gluon
Studiotopia, project co-funded by the Creative Europe Programme of the European Union.
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- ● Streaming

This Garden is part of the STARTS programme.

ARS ELECTRONICA GARDEN

PARIS

AI×MUSIC

IRCAM Institute for Research and Coordination in Acoustics/Music (FR)

Challenging the limits of AI for the next generation of co-creative tools

The Institute for Research and Coordination in Acoustics/Music is one of the largest public research centers dedicated to musical creation and scientific research. After 42 years, it remains a pioneering and world-leading venue where artistic vision converges with scientific and technological innovation. Following this tradition of combining scientific and artistic approaches, the IRCAM AIxMusic garden will display multidisciplinary views of both the scientific and creative research carried out on AI. It will feature six events: *Can we do the same with less—AI in 64 Kb*, a hands-on workshop for the AIxMusic Hackathon by Philippe Esling (FR) introducing techniques for lightweight AI and demonstration of embedded technologies; the panel *Fronteers of Music and Artificial Intelligence* organized by Elaine Chew (FR), and discussions with Dorien Herremans (BE) and Philippe Esling (FR); the panel *Musical Generatives*—a discussion panel In the framework of the *Forum Vertigo* 2020; "Little Etudes for Piano"—a performance by Elaine Chew (FR) a series of short piano pieces based on cardiac electrical anomalies; "AI Creative Agents: The Man I Love"—a video featuring the Improtek project and interpreted by Hervé Sellin (FR) and Remi Fox (FR); and the performance of the *Three Ladies Project* by artist Georges Bloch featuring the DYCI2Lib technology at Manifeste 2020.

IRCAM—CNRS UMR 9912 STMS—Sorbonne Université
The AIxMusic Festival, a S+T+ARTS flagship event, is organised by Ars Electronica and the European Commission.

© Philippe Barbosa

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ARS ELECTRONICA GARDEN

PLYMOUTH

AI×MUSIC

Interdisciplinary Centre for Computer Music Research (ICCMR), University of Plymouth (UK), Eduardo Reck Miranda (BR/UK)

Biocomputer Rhythms

Biocomputer Rhythms is a piece of music for piano with electromagnets and percussion, composed with an innovative biocomputer built using electronic components grown out of biological material. The composer is interested in harnessing biological organisms as components of computing architectures for new kinds of creative artificial intelligence. His ICCMR research team invented a biological processor made with living tissue from an organism known as *Physarum polycephalum*. They baptized this processor as the 'biomemristor'. *Physarum polycephalum* is found in decaying leaves and tree bark. Its intracellular activity produces fluctuating levels of electricity which can be relayed through its body, which prompts it to behave like a memristor. A memristor is a relatively unknown electronic component which is not widely available yet: a resistor with memory. The memristor is exciting because its behaviour is comparable to that of biological neurons.
The team built biomemristors cased in small 3D-printed mini-Petri dishes and developed an interface for a group of biomemristors to read and output signals. They baptised this system as the 'biocomputer'. Electromagnets are positioned inside the piano to vibrate its strings. Some electromagnets vibrate percussion instruments. The reason to prepare the piano with electromagnets stems from the composer´s desire to give it a dual identity characterized by standard piano sounds—produced by the hammers striking the strings—and by somewhat other-worldly sounds produced by the biocomputer.

Composer: Eduardo Reck Miranda
Assistant Engineer: Edward Braund
Interdisciplinary Centre for Computer Music Research (ICCMR), University of Plymouth

The AIxMusic Festival, a S+T+ARTS flagship event, is organised by Ars Electronica and the European Commission.

ICCMR—University of Plymouth

GARDEN PROFILE

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ARS ELECTRONICA GARDEN

SILICON VALLEY

AI×MUSIC

The Grid (US/EU), Gray Area (US), Codame (US), ZERO1 (US), MUTEK.SF (US), EUNIC Silicon Valley (US), EUNIC Washington DC (US), EUNIC New York (US), Ars Electronica AIxMusic Festival (AT), STARTS, European Commission (EU), Center for Humane Technology (US), Salesforce (US)

The Grid: Exposure — Art + Tech + Policy Days

Born out of a global crisis, *The Grid: Exposure — Art + Tech + Policy Days* explores innovative ways to reconnect the world in our current state of isolation. *Exposure* is The Grid's new annual festival format, an art + tech expo in San Francisco. It showcases the vast creative potential of Silicon Valley by exposing the global community to its ideas. Technologies are not mere artifacts, but dynamic systems entwined with culture and policy. Mobilizing artists, technologists, and policymakers from around the world, *Exposure* reimagines interdisciplinary and international collaboration to overcome deadlock and siloed thinking. It extends the conversation to leading global policymakers tasked with regulating technology. Through art, panels, talks and workshops, it works towards shaping technological development for the benefit of all. This year's *Exposure* deploys the visual phenomenon of *Blurring Borders* as an artistic strategy. It creates a platform for technology to make itself vulnerable to artistic practices rooted in humanism that expose the essence of our digital reality. Recent advances in AI have put within reach a world where art can be created and performed entirely by algorithms. In a series of panels, workshops, and live performances, The Grid: Exposure — Art + Tech + Policy Days will explore the blurry line separating the artist from the machine by comparing different creative approaches in Europe and Silicon Valley. Exposure highlights the vast creative potential of the SF Bay Area and its leading art + tech organizations (Gray Area, Codame, ZERO1, MUTEK.SF) while engaging in a dialogue with the local tech industry (OpenAI, Google Magenta, Salesforce, etc.) on the topics of AI and creativity, reimagining tech regulation, and the creation of new digital communities around the world.

Curatorial Co-Directors: Clara Blume and Vanessa Chang
Festival team: Hannah Angely, Juliette Donadieu, Robert O'Driscoll, Anna Maria Di Giorgio, Mary Ellyn Johnson, Algance Mahdjoub, Noemie Njangiru, Michael Treacy, Martin Rauchbauer, Nicola Ruffo, Nadine Schach, Bettina Wodianka / Taming Tech — Center for Humane Technology, STARTS, EU Delegation — Washington DC / AIxMusic Festival — OpenAI, Google Magenta, Ars Electronica Futurelab
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This Garden is part of the STARTS programme.

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ARS ELECTRONICA GARDEN

STOCKHOLM

AI×MUSIC

KTH Royal Institute of Technology (SE)

KTH AIxMusic Garden

The *KTH AIxMusic Garden* features three events focused on AI and music: a video-recorded performance, a panel, and a *machine folk music school*. The performance features folk music generated by AI. The panel *Music as Experience in an age of Artificial Intelligence and Computational Creativity* features six composers who have used AI for music creation, reflecting on the process. The *machine folk music school* is an interactive music learning session during which an AI-generated folk tune is taught in the aural tradition. The garden is organized by Bob L. T. Sturm (KTH Associate Professor of Computer Science). For the past five years, Sturm has been building, learning from and collaborating with AI systems trained on transcriptions of traditional music. These systems are trained on tens of thousands of transcriptions of traditional dance music from Ireland and Scandinavia, and effectively generate an unlimited supply of new tunes imitating traditional ones. This work provides the foundation for a five-year project commencing in Oct 2020, *MUSAiC: Music at the Frontiers of Artificial Creativity and Criticism* (ERC-2019-COG No. 864189)

© Carla Townsend Sturm

KTH Royal Institute of Technology (SE)
Artists: Bob L. T. Sturm (US), Daniel Näsström (SE), Jennifer Walshe (IE), Robert Rowe (US), Oded Ben-Tal (IL); Shelly Knotts (UK); Artemi-Maria Gioti (GR)

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This Garden is part of the STARTS programme.

Yuri Suzuki (JP)

The Welcome Chorus

The Welcome Chorus is an interactive installation comprised of 12 interactive horns situated on the Southern Terrace beside the entrance to Turner Contemporary, inviting visitors into the gallery space. As a collaborative work, it utilizes Artificial Intelligence to create a sonic experience for the visitors. There are two ways to engage with the Welcoming Choir. First, with local musicians' help, lyrics and melodies were created at workshops to generate the sound library. These were then fed into the AI for output at the Turner Contemporary. The second method is to encourage visitors to speak into the sculptures, which will generate musical feedback from the AI. The AI will recognize tonal changes in the voice, tempo and specific words, then produce a short melody based on the visitor's entry. Every few minutes, the Welcoming Choir performs a short piece based on the previous hours' input. This continual engagement creates unexpected moments as visitors enter and exit the gallery. Every moment is unique.

Turner Contemporary, Arts Council England, Pentagram Design LTD, Fish Fabrications, Counterpoint. Special thanks to: Gabriel Vergar II, Alice Lazarus, Adam Cheong-MacLeod of Pentagram Design LTD, Eire Szadurski, Sam Fish of Fish Fabrications, and Samuel Diggins and Tero Parviainen of Counterpoint Studios.

Kerstin Ergenzinger (DE)

Pluvial

Pluvial is a sono-tactile architecture that follows the associative and physical quality of rain noise. It connects the listening body with a sonic, animated and partly self-organizing instrument. An acoustic environment arises that unfolds in time and space. The eighty-channel sculptural instrument consists of self-made, digitally controlled drums that work according to the String-Drum principle and use the shape memory alloy Nitinol as instrument string. Their metallic resonance tubes lift and lower at the heat-sensitive, kinetic nitinol strings, sending and knocking swelling rhythms and rushing harmonies through space. In analogy to the phenomenon of rain, these string drums are driven by random on-off voltage pulses, which in turn are modulated by the density and intensity of collected precipitation measurements on the world's oceans. The physical body of the drum cloud acts like a set of bandwidth filters. In addition, each drum is equipped with a feedback pendulum allowing the rhythms of the individual drums to diverge further.

Developed and produced in collaboration with Thom Laepple.
Part of the research project "Rhythmic Textures," funded by Einstein Foundation Berlin. Realized with the Graduate School at the Berlin University of Arts.
Affiliated with and supported by the research project nuClock. (nuclock.eu)
Supported by the SMArt® Steps Program of Dynalloy.Inc
Working with open source data of the Ocean Rain And Icephase precipitation measurement Network (Ocean- RAIN)

The Welcome Chorus, © Kate Radiomargate

Pluvial, © IvoFaber, KIT Duesseldorf

SPLEEN MACHINE, © Alex Braga

Alex Braga (IT)

SPLEEN MACHINE

Alex Braga explores the relationship between future, art, society and technology, between mankind and machines.
SPLEEN MACHINE documents years of Alex Braga's research in the field of AI, and the creation of a new musical instrument called *A-MINT,* which is the keystone to so-called "Augmented Music". In *SPLEEN MACHINE,* a robot seems stuck in a mystic crisis and begins to pray. Though exponentially more efficient than humans, machines will never succeed in connecting to a metaphysical world, were the meaning of life itself is shaped. That is why humankind will always be the centerpiece of our sustainable development, and why machines will never replace us.
But beware: nowadays spiritual gestures are becoming meaningless for humans as well. If we let go our humanity, we also reliquish our grasp on the beauty and meaning of life. This has been defined as the new Digital Humanism. We are the guardians of the Meaning of Life. Machines are the force to help us forge the future.

Alex Braga: concept — music — visuals
Music AI software: Alex Braga — Francesco Riganti Fulginei — Antonino Laudani
Visual AI software: Alex Braga — Francesco Riganti Fulginei — Antonino Laudani — Massimiliano Nicolardi
Robot: Istituto Italiano di Tecnologia, Nikos Tsagarakis

Artemi-Maria Gioti (GR), Szilárd Benes (HU)

Bias, for bass clarinet and Interactive Music System

A neural network, trained to simulate my own aesthetic judgments, is responsible for the computer's decisions during its interaction with the musician: i.e., whether it will "mirror" the sounds played by them, propose new sound material or simply remain silent. The title *Bias* refers not only to the subjective nature of aesthetic judgments, but also to machine learning algorithms making arbitrary or erroneous assumptions about data. The ambiguity in the title is a comment on the unattainability of objectivity, both in human judgment and in data-driven models. On a second level, *Bias* explores the relationship between human and machine agency by blurring the boundaries between them and blending human and computational decision-making. By training a neural network to predict my aesthetic preferences, I aimed to create a new hybrid agency that is based on, yet departs from, my own aesthetics. The decisions made by the computer during its interaction with the musician cannot be entirely attributed to my own preferences, as these are "distorted" through AI bias. The result is a hybrid human-machine agency that shapes the performance in dynamic and, at times, unpredictable ways.

left: © Lucija Novak / right: © Laszlo Juhasz

Wobbly (US), Jennifer Walshe (IE)

MOREOVER

An infomercial for products with limitless potential, delivered in six luscious, yet incomplete, episodes.

Tune in for the 2020 *MOREOVER* infomercial reveal, unboxing and presentation. What is *MOREOVER?* A route to your best self, via your raw and worst selves. *How* is *MOREOVER?* Because content. *Who* is *MOREOVER?* Like other high-profile CEOs, Vallendrome-based Wobbly aka Jon Leidecker has enough imagination to hope to live forever, according to three different people who heard him say so. From the London HQ, Jennifer Walshe, a personhood repeatedly filmed "boarding a yacht" performs the *MOREOVER* mantra. "You can think it, you can feel it, but you can't say it. Do. Not. Say. It."

MOREOVER, Jennifer Walshe, Wobbly

Camel Zekri (FR), Marc Chemillier (FR)

Gnawa Machine

This duo was formed in Athens for the *ImproTech 2019 Festival,* which is dedicated to improvisation with intelligent digital systems. The challenge of *Gnawa Machine* is to integrate the computer in a particular cultural context, that of the Gnawa Brotherhood in North Africa, of which Camel Zekri is a member. His modal guitar playing is accompanied on keyboard by Marc Chemillier, assisted by the Djazz system, which learns automatically by expanding its memory and follows the tempo thanks to a score- following algorithm.

The guitar is then transformed into a controller equipped with motion sensors. It controls a second system, Le Cercle, which dialogues with the first one. The two machines listen to each other and improvise on what the other is playing. Djazz records with long-term memory, while Le Cercle captures small fragments on the fly.

ImproTech Festival, IRCAM & CAMS-EHESS (Djazz software, http://digitaljazz.fr), LISILOG (Le Cercle software)

hexorcismos AKA Moisés Horta Valenzuela (MX)

Neltokoni in cuícatl

Neltokoni in cuícatl (Talismans in Poetry) is a multichannel audio/visual poetry performance driven by a disembodied AI system consisting of three generative deep learning models trained on precolumbian sonic forms, poetry and imagery.
The iterative performance presents a multisensory experience of the symbiosis between artificial neural networks and ancestral technologies of spirit; acting as a form of resistance towards colonial practices of language erasure by representing vernacular knowledge and forging new mythologies within artificial intelligence art production systems.
By understanding the cultural nature of computational technology, *Neltokoni in cuícatl* proposes cultural representation as a strategy for reconsidering the cultural homogenization brought forth in the age of AI and algorithmic mediated culture.

Lead Artist: Moisés Horta Valenzuela AKA hexorcismos

Gnawa Machine , © Jeff Joly

Neltokoni in cuícatl, © Moises Horta Valenzuela

Yishu Jiang (AT), Ali Nikrang (AT), Daniela Mülleder (AT)

Running Off the Senses

© Nancy Horowitz

© vog.photo

It is still a strange feeling when AI-generated music triggers emotional reactions in us. Despite the inability of AI systems to feel human emotions, they are able to create music that sounds natural and emotional. This is achieved by learning relevant statistical patterns that AI systems can find in large collections of music samples. This performance with Yishu Jiang and Ali Nikrang (violoncello and piano, respectively) focuses on AI-composed music, with human-composed music as counterpoint. The performance is meant to emphasize the strange feeling of being emotionally manipulated by AI. The compositions in this performance also include results from a newly developed AI composition system called *Ricercar: An AI-based Music Companion,* developed by Ali Nikrang at the Ars Electronica Futurelab.

Ali Nikrang (AT), Martin Honzik (AT)

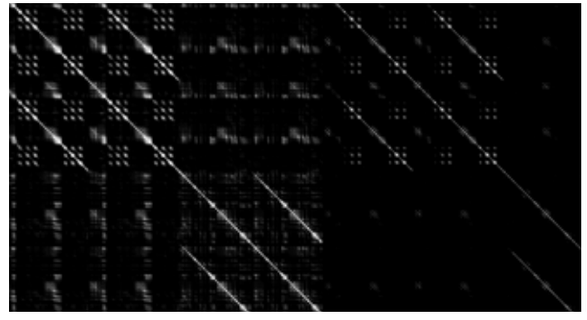
Somnium

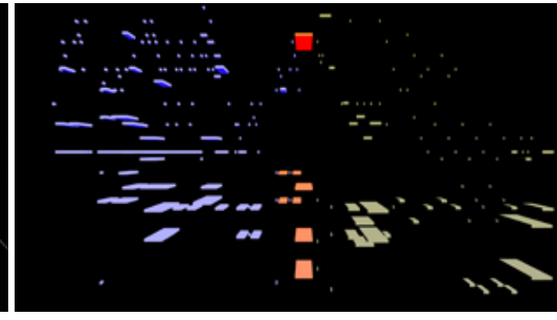
To be moved deeply by the atmosphere of a place, or by music, is a feeling every human being can relate to. As an experience, it is not only a testament to our perception of the world, but the manifold emotions that come along with it, often contradictory and opaque: every beautiful moment implicates the melancholy of its transience.
Somnium is an installation playing with the ambience of the stunning location at the JKU TNF-tower and hymns, a musical form specifically written for the purpose of adoration or prayer. Together with the visitor an artificial intelligence (AI) observes the inspiring surroundings at the tower which invite the viewers to contemplate and enjoy the situation. Meanwhile the AI "interprets" the Anthem of Europe by Beethoven, The Internationale, the National Anthem of the Republic of Austria and the Anthem of Upper Austria, turning the moment into a bittersweet reflection on the current situation of democracy and the condition of our planet in general. What are the hymns of today? Are there any? What does farsightedness mean in our complex world? *Somnium* is also a visionary novel by Johannes Kepler, considered by many as one of the first works of science fiction. What are our outlooks, our visions today? The installation sparks an interplay between the "perception" and "interpretation" of the AI and the associations of the individual visitor, leaving open questions about today's relationship between humanity and machines. The AI-based music composition system used here is called "Ricercar: An AI-based Music Companion" and is being developed by Ali Nikrang at Ars Electronica Futurelab.

Ali Nikrang (AT)

How Machines See Music

A deep neural network usually contains a very large number of parameters — millions or even billions — that are learned during the training; a complexity that's needed for the nonlinear internal representations of the input data. This installation visualizes some aspects of the inner life of a deep neural network for music composition called *Ricercar* that is being developed at Ars Electronica Futurelab.
Ricercar is trained with 25000 pieces of music and can compose music. In this case, however, the network will not compose, but be fed with an existing piece of music as input. We observe the reaction of the neurons in each layer as the music continues, showing us every moment in the piece in which neurons are activated and react to it. Finally, a so-called "similarity matrix" shows the similarity between the activated neurons at any point in time with any other. In other words, it shows reveals which parts in the piece are similar as they produce the activation of similar neurons. The result is a novel way of visualizing music, which shows the higher-level structures of a piece of music (e.g. its repetitive structures). It also shows us, once again, that music is not only pleasant to hear, but also contains beautiful hidden visual structures that can span the entire piece.





Johann Sebastian Bach, Goldberg Variations No. 11. Visualization shows the activation maps of two selected layers in the *Ricercar* composition system. © Ali Nikrang

Ali Nikrang (AT)

Ricercar: An AI-Based Music Companion

Ricercar is an interactive AI-based music composition system being developed by Ali Nikrang at the Ars Electronica Futurelab.
Ricercar refers to a musical form of the Renaissance and Baroque which means "search" in Italian. Composers used it for pieces in which they experimented with a theme or musical idea to discover qualities such as permutation, possibilities in variation and harmonic potential.

Ricercar: An AI-Based Musical Companion follows a similar idea. It aims to create an intuitive interface between human artists and an AI-based composition system, in which human users and the AI system can collaboratively discover the potential of a musical idea, given to the system by the users or initialized by the system itself. The interaction takes advantage of the benefits of artificial creativity, as well as the human ability to personalise and control the system's output.

THE BIG CONCERT NIGHT 2020

Fidelio Freedom Project

In cooperation with Bruckner Orchestra Linz

The Big Concert Night in collaboration with Bruckner Orchestra Linz has been an integral and unique part of the Ars Electronica Festival for over a decade. Each year, it provides unique opportunities to explore and cross boundaries — an encounter between musical worlds. Like many other program formats of this year's festival, the security measures imposed by COVID-19 strongly affected its design and presentation possibilities. Despite all, and after several years of successful collaboration with the conductor Markus Poschner, it was possible to develop a project that completely lives up to the unique format of the Big Concert Night in its interweaving of musical styles and epochs and the interaction of artists from different genres. The necessity of the spatial distances between the visitors as well as performers, and the fact that the festival is conceived as continuous hybrid between on-site and online, led to a new design principle for staging the project. The extensive grounds of the JKU Campus transform into a performance area for musicians and actors. The audience's attention is not focused on a central stage, but surrounded by dialogue and interplay of artistic elements.

Fidelio Freedom Project

At the center of the project is Beethoven's Fidelio, the great opera of liberation. In reference to the current global conflict situations and the thematic focus *Autonomy—Democracy* of this year's Ars Electronica, the *Fidelio Freedom Project* embarks on a journey through cultural history. Motifs originating from antiquity are taken up, revolving around resistance and the struggle for justice, but also addressing solidarity, mutual support and the responsibility of the individual. Markus Poschner and his Bruckner Orchestra are joined by two outstanding actors — Karl Markovics and Maria Hofstätter — along with the jazz formation of Bastian Jütte, Harald Scharf, Hugo Friedrich Siegmeth and Nguyên Lê. Additionally, this evening will feature the musicians Rupert Huber, Roberto Paci Dalo and AGF.
Chosen texts and quotes originate from Pico della Mirandola, Olympe de Gouges, Rainer Maria Rilke, Johanna Dohnal, John Milton, Martin Luther King, Henry David Thoreau and Eckart Winkler.

Interference — Christina Kubisch and Katharina Ernst

The second part of the Big Concert Night brings Christina Kubisch and Katharina Ernst on stage with their Project *Interference*. A piece that combines instrumental sounds with the sounds of electromagnetic fields and digital elements to create a virtuoso interplay of human and machine.

The Big AI-Jam — AI meets musical diversity

Finally, Ali Nikrang — composer and AI researcher at the Ars Electronica Futurelab — will present his AIxMusic project. He has developed an advanced AI composition software and invited musicians from the international network of festival partners to create their individual musical response, interpretation or improvisation. This evolved into a major network project within the framework of the Ars Electronica Festival 2020, resulting in nine musicians performing their contributions live.

A project by Ars Electronica and Bruckner Orchestra Linz
Orchestra: Bruckner Orchestra Linz
Principal conductor: Markus Poschner
Texts: Karl Markovics, Maria Hofstätter
Live music: Rupert Huber, Roberto Paci Daló, Nguyên Lê, Harald Scharf, Hugo Friedrich Siegmeth, Bastian Jütte, Christina Kubisch, Katharina Ernst, AGF
Big AI Jam Live: Ali Nkrang, Yishu Jiang, Daniela Mülleder, Josef Klammer, Rupert Huber, Roberto Paci Daló, Ars Electronica Futurelab

The Bruckner Orchestra Linz

An orchestra in tune with people, with the times, and with their challenges

The Bruckner Orchestra Linz, which can look back on a history and tradition spanning more than 200 years, has over the past decades developed into one of Central Europe's leading orchestras. It is not only the symphony orchestra of the province of Upper Austria but also serves as the theater orchestra for the musical productions of the Linz Landestheater (provincial theater). As a musical ambassador for Upper Austria as well as for the ensemble's namesake, the Austrian-born composer Anton Bruckner, the BOL embarks regularly on international tours. Since Markus Poschner took over as Music Director in the fall of 2017 — immediately delivering a sensational performance at the Concert Night of the Ars Electronica Festival — the orchestra has gone through an opening-up process that generates many new formats, seeks unexpected venues, finds surprising ways to convey music, and above all produces artistic events whose urgency and intensity make them both popular and critical successes. Markus Poschner and the BOL have crafted their own distinctive way of playing Bruckner's music, which is expressed in a unique, Upper Austrian sound dialect that can be heard on their recent recording of Bruckner's Symphony No. 8. As of 2020, the Bruckner Orchester Linz for the first time has its own concert series at Linz's Brucknerhaus, and since 2012 has had a series at Vienna's Musikverein. The Bruckner Orchester Linz was named "Orchestra of the Year" at this year's Austrian Musiktheaterpreis gala.

Text: Norbert Trawöger – Artistic Director Bruckner Orchestra Linz

Christina Kubisch (DE), Katharina Ernst (AT)

DOUBLÉ plays Interference

Interference is a piece about different rhythmical structures controlling each other. In the first part, Christina's recordings of electromagnetic waves of all kinds – such as security barriers, light advertisements and server rooms from Bangkok to NYC, from Berlin to Shanghai – lord over the drums; while the old dependency on metronomic forms is questioned in the second part, which develops into a revolutionary role reversal for the third and last segment, where the playback track no longer leads the drummer, the machine no longer sets the mood. A human sense of timing is re-established, the computer becomes like a band member, listening and adapting; and while Christina is detecting electromagnetic fields live on stage with her especially developed technology that translates electromagnetic waves into audio waves, Katharina bends the possibilities by following — and being followed by — BeatSeeker.

Drums: Katharina Ernst
Electromagnetic sounds: Christina Kubisch

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