institut für elektronische musik und akustik

22nd Sound and Music Computing Conference & Summer School

Installation Walk

Thursday, 10.07.2025, 11:00-15:00

Friday, 11.07.2025, 11:00-15:00

Saturday, 12.07.2025, 11:00-15:00

Inffeldgasse 10, (Petersgasse 116–118),
8010 Graz

1. Betsey Biggs and August Black – We Are Here FM

We Are Here FM is a live, real-time web-hosted generative installation that reconfigures the earth's sights and sounds. A constantly evolving immersive transmission traversing our world, it brings together geo-tagged audio and images with quiet ambient generative music to create unnamed, hyperreal panoramic landscapes in which audio-visual pairings that have never coexisted acquire a veneer of the 'real.' These experiences are often magically experimental, occasionally hauntingly disturbing, and at times utterly mundane. Quiet ambient music generated from predominant frequencies of the audio stream functions as non-diegetic mood-setting sound, connects the scenes, and plants the imaginary landscape firmly in the present.

Participants — whether experiencing it on the web or in-person at an installation — are immersed both sonically and visually in a realistic yet artificially created landscape made from sounds and images from the past , and must locate themselves — physically, emotionally, socially, and politically — within a present space. No place names or context are offered, and the scene changes every few minutes, when a new set of randomly chosen geographical coordinates is chosen.

Without any identifying information given, the landscapes are presented equally on their own terms, and participants must negotiate the space using their own eyes, ears, and imaginations, unaffected by any preconceptions context might give. Experiencing this together (even if via a personal device), a new, speculative future reality is created by the group. This experience of co-creation leads visitors to form a temporary sense of community, together navigating a weird, funny, and complicated world. We hope you will enjoy getting lost with us.

Betsey Biggs is a composer and artist using technology to combine image and sound in site-specific works, audiovisual performances, interactive installations, public interventions, relational projects, films and videos, musical compositions and multimedia theatrical works. Her body of work connects the dots between sound, music, visual art, place, storytelling and technology. It also deconstructs and arranges scraps of sound and image to clarify and recreate the experience of place, as well as adapting the technology of our contemporary world – mobile audio, digital video, interactive electronics – to engage people creatively with the physical and social worlds around them. Her work has been presented at the Denver Museum of Nature and Science's IMAX Theater, ISSUE Project Room, the Abrons Arts Center, Roulette, the Conflux Festival, MASSMoCA, Brown University, Harvard University, Sundance Film Festival, Hong Kong's Videotage and on the streets of Oakland, CA and Brooklyn, NY. She has collaborated with Moving Star, Pamela Z, Margaret Lancaster, Evidence, The Now Ensemble, The BSC, So Percussion, Tarab Cello Ensemble, the Nash Ensemble, Grand Valley State University New Music Ensemble and filmmakers Jennie Livingston and Amy Harrison. Biggs earned degrees in

English Literature and Music from Colorado College and Mills College respectively and a PhD in Music Composition from Princeton University. She has also held fellowships at Brown University and Harvard University, and taught at Princeton, Brown, The Rhode Island School of Design, and currently serves as Assistant Professor of Critical Media Practices at the University of Colorado Boulder.

August Black is a hybrid practitioner of art, design and engineering. He makes experimental spatial and acoustic situations, often by building his own technological artifacts and instruments in hardware and software. His past work focused on live networked audio, mixing FM radio with user input through online software. His current work seeks to build kinds of collective "togetherness" and span the fields of the philosophy of technology, software studies, techno-politics, and networking. He's been a member of arts organizations such as the ORF Kunstradio and the Ars Electronica Futurelab, as well as a former member of the engineering team at Cycling '74, makers of Max/MSP. He has shown works at festivals and venues such as Ars Electronica Festival, Dutch Electronic Arts Festival, Wave Farm, Transmediale, Pixelache, LA Freewaves, Piksel Festival, Polar Circuit and the Tasmanian Museum of Art, among others. He is currently an Assistant Professor of Critical Media Practices at Colorado University, Boulder.

PLACE: Petersgasse 116–118, at the corner of Inffeldgasse (Tram 6 stop: Schulzentrum St. Peter; entrance behind the garden terrace of Café Pail)

2. Arne Eigenfeldt and Simon Overstall – Coming Together: Cityscapes

Coming Together: Cityscapes is a collaboration between Arne Eigenfeldt – a coder-composer – Simon Lysander Overstall – a coder-media artist – and a multi-agent system.
The work is an addition to the series of Coming Together generative artworks by the first artist in which the process of convergence by agents is the focus of the work, in the movement from random individualism to united ensemble interaction. The use of multi-agents are integral to the generative process; instead of attempting to create a complex top-down system for intelligent control or creation, imbuing individual agents with the capacity to make decisions and interact with other agents to create complex, dynamic, and emergent systems provides a bottom-up method.
Given a database of audio and video recordings of "city-walks" found on YouTube, five audio and five video agents communicate with one another and negotiate their way through the archive in an effort to arrive at a single clip. The audio recordings are granulated, and heavily filtered through selected EQ bands. Visually, a single screen displays five slices of the selected videos in greyscale, with separate colours highlighted, thereby analogous to the equalised audio recordings.

The work has three distinct phases:

Part One:
The agents attempt to arrive at the same clips. They initially chose a random clip from the database. Each audio file has been analysed and segmented; a segment is initially chosen, and is time-stretched and heavily filtered. Agents select prominent Bark bands in the recordings, and "claim" these spectral regions – the number of bands an agent can claim depends upon how far along the clip negotiation has progressed. The partnered video agent similarly applies a selective colour filter based on hue to its video.

Part Two:
The agents attempt to align their starting points. To do so, they shorten their gestures. Because the audio agents are still playing at maximum 5 of 25 possible Bark bands, the agents must align their starting points to realise a full spectrum. Similarly, the video agents still apply a hue process, selectively allowing certain hue ranges to pass while others are "greyed out".

Part Three:
The agents attempt to expand their segments. They often get out of alignment again as their individual lengths will differ, and play through the negotiated visual "downbeat". Once aligned, an visual and aural "pay-off" is executed.

Arne Eigenfeldt is a composer of live electroacoustic music, and a researcher into intelligent generative music systems. His music has been performed around the world, and his collaborations range from Persian Tar masters to free improvisors to contemporary dance companies to musical robots. He has presented his research at major conferences and festivals, and published over 50 peer-reviewed papers on his research and collaborations. He is a professor of music and technology and Associate Dean Academic at Simon Fraser University.

Simon Lysander Overstall is a computational media artist, and musician/composer from Vancouver, Canada. He develops works with generative, interactive, or performative elements. He is particularly interested in computational creativity in music, physics-based sound synthesis and performance in virtual environments, and biologically and ecologically inspired art and music systems. He has produced custom performance systems and interactive art installations that have been shown in Canada, the US, Europe, and China. He has also composed sound designs and music for dance, theatre, and installations.

PLACE: Inffeldgasse 10/1, IEM Seminar Room

3. Simina Oprescu – Sound of Matter

Sound of Matter traces the acoustic afterlives of 15 historical church bells from the archives of the Märkisches Museum and Stadtmuseum in Berlin, spanning the 15th to early 19th centuries. Each bell is meticulously documented—weight, height, diameter, material composition—carrying a distinct sonic identity shaped across centuries. While most are cast in bronze, two rare steel bells stand sentinel outside the museum. The density and physical properties of each bell determine its tuning system and tonal character, embodying the intertwined histories of craft, community, and ritual.

Through research conducted during my Master's at Sound Studies and Sonic Arts, UdK Berlin, I calculated the fundamental frequency—or Hum—of each bell, along with its partials: the Prime, Tierce, Quint, and Nominal. Using the formula $f = K1t/d^2\sqrt{E/s(1–m^2)}$, which accounts for material constants, thickness, diameter, Poisson's ratio, and Young's modulus, I developed a Max/MSP patch to analyze historical data and reconstruct the bells' harmonic spectra.

The installation was originally presented using eight monaural loudspeakers —not for sound diffusion, but to create a stationary vibrational field. The number eight references architectural symmetry and sacred geometries, allowing flexible spatial arrangements rooted in balance. For the presentation at IEM, the piece will be adapted for the IKO system (IEM's icosahedral loudspeaker), which allows spatial projection from a single point source. This adaptation opens up a new dimension of immersion, enhancing the subtle vibratory shifts and psychoacoustic effects at the heart of the work.

Layering the bells' Hums produces beating effects and harmonic interplay that invite deep listening. As the listener moves, partials emerge, overlap, and recede, offering a constantly shifting experience of tonal entanglement.

Conceptually, Sound of Matter echoes lost sonic rituals, reanimating the voices of historical bells now fallen silent. It reflects on the tension between the sacred and the profane, between communal orientation and solitary reflection, and on the material afterlife of instruments once central to social and spiritual life. The speaker array is not meant to fill the space with sound, but to activate it — creating a durational, embodied presence where resonance, history, and perception converge.

Simina Oprescu (b. 1993) is a Romanian composer and sound artist whose work explores the physical and perceptual properties of sound, focusing on its movement, resonance, and presence across the audible and inaudible spectrum. Combining electroacoustic composition, spatial sound, and psychoacoustics, she investigates sound as both a material phenomenon and a carrier of emotional and sensory experience.

Her practice integrates synthetic and natural elements, drawing on a wide range of sound sources and recordings from physical and natural environments. Working across stereo and multi-channel formats, Oprescu

examines the relationships between sound, space, and perception, often engaging with concepts of attention, unity, and the vibratory nature of matter.
Her works have been presented internationally at festivals, galleries, and institutions including EVA International | Ireland's Biennial, Museum Tinguely (Basel), Märkisches Museum (Berlin), Palmer Gallery (London), Art Encounters Foundation, MOTA Museum (SI), n.b.k Berlin, Hošek Contemporary (Berlin), Suprainfinit Gallery (Bucharest), MARe Museum of Recent Art (Bucharest), SONICA (SI), Cynetart (DE), Rokolectiv (RO), Simultan (RO), and ORF musikprotokoll (AT). Her compositions have been released on the Swiss label Hallow Ground and have been featured in publications such as The Quietus, The Wire, and Positionen Berlin. In 2020, she was selected for the SHAPE+ platform artist roster, contributing to its focus on emerging sound and audiovisual practices. Her work reflects a dedication to research-driven artistic exploration, bridging the technical, perceptual, and conceptual dimensions of listening.
www.siminaoprescu.net

PLACE: Inffeldgasse 10/1-3, IEM Staircase with Foyer

4. Enrico Dorigatti – [in.tangibile]

[in.tangibile] is an interactive sound installation that proposes a reflection on and exploration of the materiality of sound. While often referred to as an object in the sonic arts context, sound nevertheless remains formless and elusive. Yet, it is a physical phenomenon that impacts, albeit usually imperceptibly, the surrounding environment. Is its supposed intangibility, thus, intrinsic to the sound event, or is it related to our perceptual limitations?
By expanding the concept of opera aperta (open work) proposed by Umberto Eco, [in.tangibile] centralises the role of the audience in the process of artistic creation. According to Eco, an artwork is not an accomplished and unchangeable fact. Rather, it develops from the ecologies of interaction unfolding between the audience and the artefact provided by the artist. Such ecologies range from conceptual (interpretation) to tangible (physical interaction). Through the interactive affordances of [in.tangibile], Eco's notion is expanded, acquiring tangible, physical meaning. Simultaneously, the audience is elevated as co-creators, and their role in shaping the artistic and aesthetic experience is centralised.

Enrico Dorigatti is a sound artist and creative technologist working across different formats. He is especially interested in the artistic exploration of non-determinism, audio-visual interaction, generative systems, and shared agency between humans and algorithms. Formerly a conservatory graduate (BA and MA in electroacoustic music composition) and with a broad IT

background, he is currently a PhD candidate in creative technologies at the University of Portsmouth (UK). His artistic and scholarly output has been presented internationally.

PLACE: Inffeldgasse 10/3, IEM - Side room off the corridor

5. Rachel Devorah Rome – psalter ex machina (wicked/hallowed)

wicked/hallowed is a dialectical exploration of technospiritual soundscapes, bridging ancient ritual and contemporary digital culture. The octoechos, a liturgical mode system foundational to early Christian chant—arguably one of the earliest algorithmic frameworks for organizing sacred time—serve as the starting point. Here, the octoechos are wrapped in SuperCollider routines and realized by the 'voice' of Winfried Ritsch's autoklavierspieler, a MIDI-controlled mechanical piano system.
Entangling these mechanical/acoustic strains are digitally processed samples drawn from *Hallow*, a popular Catholic meditation app backed by venture capital. Through this juxtaposition, *wicked/hallowed* interrogates the shifting place of spirituality in the age of automation and algorithmic devotion.

Rachel Devorah Wood Rome is a Boston, USA-based electronic musician, educator, and labor organizer. She values machines for their patience and capacity to remember.
She is interested in superhuman prolongation, opaque complexity, the re-signification of archaic tools&materials, and the liminality between analog&digital noise.
Her work has received support from the Adrian Piper Foundation (Berlin), EMS (Stockholm), INA/GRM (Paris), the Goethe Institut [DE], MassMoCA [US], the New Museum [US], New Music USA, STEIM (Amsterdam), Swissnex [CH], and Villa Albertine [FR].
It has been released on pan y rosas discos (Chicago); Infrequent Seams (NYC); and Full Spectrum Records (Oakland), published by parallax; Feminist Media Histories; and Ugly Duckling Presse, and has been heard in fourteen countries on four continents performed by/with artists such as Nava Dunkelman, Fred Frith, Forbes Graham, Brad Henkel, Seiyoung Jang, Ava Mendoza, Roscoe Mitchell, Robbie Lee, Lydia Moyer, Ryan Muncy, Liew Niyomkarn, Erin Rogers, and the William Winant Ensemble.
She is employed as an Assistant Professor of Electronic Production and Design | Creative Coding at the Berklee College of Music, and Vice President of Full-Time Faculty with MS1140 AFT Massachusetts.

PLACE: Inffeldgasse 10/3, IEM Experimentalstudio

6. Mattia Benedetti – crawlspace

Short video fragments are distorted and form a dark stream of almost comical bitterness. Someone is hidden in his room, devoid of any contact. He bitterly resents the people around him, or he would - there's no one around. The only things he resents more than others is himself. He's the man from the underground.
подполья it's the Russian word for the space under the floor, where rats and bugs thrive. it's not a space fitting for human beings, it's a space for creatures that needs to be removed from sight.
crawlspace is a narrative A/V piece based on Notes from the Underground by Dostoevkij. It tries to render the corrosive irony of the novel through the disconnected juxtapositions of incompatible sound objects. Mimicking the character self-awareness, every section tries to negate the others, as if the piece is trying to ridicule itself.
The piece was realised with Max MSP, both the audio and video. The aim was to dehumanise the performance as much as possible, rendering the movement mechanical and stiff, as in a Buster Keaton short. Every scene employs different techniques: moire, random slicing and distorted sampling. Each of this technique moves independently, toward chaos.
Every layer has its own rules: pre recorded materials clash with improvisation that crashes with the machine that crushes its own byproducts.

Mattia Benedetti creates acousmatic music, pieces for instrument and live electronics and A/V compositions. He's interested in quiet music, algorithmic and aleatoric techniques and the relationship between sound and words.
His pieces have been presented in Perugia (Segnali 2018), New York (ICMC 2019 and NYCEF 2020), Buenos Aires (Atemporánea 2019), Salta (Espacios Sonoros 2019), Ciudad de México (MUSLAB 2020), Madrid (In-Sonora 2020), Santiago (ICMC2020), Taipei (WOCMAT 2020), Madrid (IN-SONORA 11), Paris (en Chair et en Son 2021), Guayaquil (MUSLAB 2023), Manchester (Mantis 2023), Curitiba (SiMN 2023), Belfast (Sonorities 2024), Roma (Broken Forms), Lisboa (Cultura & Sustentabilidade 2024 and Festival Imersivo 2025), Firenze (Tempo Reale Magnetica) and Glasgow (Radiophrenia 2025).

PLACE: Inffeldgasse 10/3, IEM Lehrstudio

7. Ess Whiteley and Andrew Wharton – _.noocambriidæ._

Synthetic/Organic, digital/biological, virtual/actual, noocambriidæ brings into being monstrous entities that are born out of the compost pile of the collective unconscious as it operates through cyberspace. Though the exact

date and attribution are uncertain, the term ‘noosphere’ is commonly linked to Vladimir Vernadsky, Teilhard de Chardin and Edouard Le Roy, as early as the mid-1920s. This concept refers to the third stage in the earth’s development, where the emergence of human cognition will fundamentally alter the geosphere and biosphere of the earth. noocambriidæ positions the noosphere not just as an emergent field, but as a substrate where entities can come into being. Through 3D animation and 10-channel spatialized sound, noocambriidæ acts as a nooscope into this realm of more-than-human behaviors, speculating on a second cambrian explosion of autonomous creatural forms born out of primordial cyborg potentials.

Ess Whiteley is a musician and artist working primarily with electronics whose practice encompasses the creation of performances, scores, and installations. His work is inspired by the post-internet, eco-futurity, more-than-human worlds, spiritual experience and the existential impacts of technology on modern life. Ess is interested in speculative world-building, vibrational storytelling, and the capacity of organized sound to mutate the real. Through his work, he seeks to create aesthetic experiences that challenge, expand, and meditate on everyday encounters with the sensuous. Ess has been awarded commissions from ensembles such as Alarm Will Sound and Riot Ensemble and has had work presented at MATA (USA), Int-Act (TH), MANTIS (UK), TIER (DE), Dublin Music Current (IR), WOCMAT (TW), Matera Intermedia Festival (IT) amongst others. He received a BM in Composition from McGill University and is currently a PhD Candidate in Composition at the University of California-San Diego where he studies with Michelle Lou and Roger Reynolds.

Andrew Wharton is a San Diego-based artist exploring the membrane between the organic and synthetic. Working across machine learning, physical computing, alchemy, digital fabrication and simulation, he produces sculptures, environments, and systems where natural and intelligence-directed systems meet, intertwine, and meld in an effort to rupture the natural-unnatural binary. His work speculates on machinic consciousness and post-human futures in the wake of environmental breakdown. Andrew received his Bachelor’s degree in Spatial Studies from the College of Creative Studies at the University of California, Santa Barbara. He is currently pursuing his MFA at the University of California, San Diego.

PLACE: Inffeldgasse 10/3, IEM Lehrstudio

8. Seiichiro Matsumura – Granular Bells Resonated

The artist made the system, which provides a state of immersion in a wave of overlapping bell sounds, such as tongue drums, Tibetan bells (Singing Bowl), Tingshaw and others. To weave a variety of sound textures, including

overtones, the system automatically stretches sounds using granular synthesis techniques, overlaps sustained bell sounds of different pitches, and locates scattered bell sounds. This system is made by using Pure Data to invite people to participate in structuring this piece by interacting with the system. When participants hit the Tibetan bells or ring Tingshaw located at the center of the speakers, those sounds are recorded automatically, and they are used as materials sounding in the piece. Those sounds are moving between multiple speakers and surrounding participants so that they would feel like standing at the bottom of an imaginary huge singing bowl.

Seiichiro Matsumura is a composer, a sound and interaction designer and Professor at School of Design, Tokyo University of Technology in Japan. His career started with Sega as an arcade video game sound designer. After turning into academic field, he learned at the Institute of Sonology course of Royal Conservatory the Hague in the Netherlands, then he received Ph. D. of The University of Tokyo in Japan. His interactive sound artworks were exhibited in Japan, China and Korea as a part of the “Magical Museum” exhibitions series, also exhibited at WRO Media Art Biennale and Audio Art in Poland. Some pieces were awarded at the Japan Media Arts Festival (honorary mention) and the Asia Digital Art (Grand Prix). He also presented his works and live performances at ICMC, NIME, SMC, ADADA and Pd-con. He wrote and published in Japanese “Pd Recipe Book” (BNN, 2012), “Sound Design with Max” (I/O books, 2017), "Learning Music Tracker with Renoise" (I/O books, 2020), “Sound Design” (Corona Publishing, 2024), ”Music Production -Programming, Mathematics, Media Art” (Corona Publishing, 2025).

PLACE: Inffeldgasse 10/3, IEM Produktionsstudio

9. Ingo Randolf – p/q – rational number decimals as rhythmic pattern

A rational number is a division of two integer numbers with a decimal expansion either terminating after a certain number of digits, or eventually repeating a sequence of digits over and over.
An example for a terminating rational number is 1/4 = 0.25. An example for a rational number with repeating decimals is 1/11 = 0.090909...
For this project the first 50 million prime numbers were used to find rational numbers with repeating decimals by calculating “1 / prime number”. Within these 50 million calculations 536 numbers were found that produce a repeating pattern between 3 and 399 digits long. There might be more longer patterns hidden but for this installation a selection from this 536 numbers are used.
The rhythms are formed using the sequence of digits of the repeating pattern. For example the calculation 1/13 results in

0.076923076923076923076923…, the repeating sequence of digits in this case is: 0 7 6 9 2 3. The amount of digits define the amount of beats within one bar and each digit defines the delay time to the next digit. This means that long sequences would produce very fast rhythms therefore long sequences are split into several bars. The duration of one bar stays the same while the rhythm within a bar changes as the sequence of digits change.
Ten solenoids are used to produce sound related to each digit and the currently performed sequence is displayed for the audience to see the division and the resulting sequence. What you hear are representations of the repeating decimal expansion of rational numbers slowly fading out as the sequence progresses into insignificance. The signal to the solenoids gets weaker and weaker until the rhythm starts to break apart and eventually stops being audible. This is when a new sequence starts playing.

Ingo Randolf, born in Salzburg/Austria 1977, studied “audiovisual media design” at the University of Arts in Linz/Austria (2000-2005). After his study he worked as artist in Linz creating live visuals (bildstrom.at, Trio refleXions), videos and media/art. He then also worked as cutter, video animator and video post producer. Digital media, programming and physical computing was always part of his practice which became more important during his stay in Sweden (2010-2012) when he joined building an electronics workshop for artists. A remake of the installation “Feed the idiots” was finished during this period and was presented 2011 in Linz/Austria. Since 2013 he is based in Berlin working as programmer developing interactive installations and apps (e.g.: Studio Tomás Saraceno, NEEEU Spaces), open source (e.g.: RabbitControl), applications and his own projects. His sound-art installation “urban needle” (2014-2019) turns rooms into noise using an automated process inspired by the principle of a record-player turned inside-out. The “Tree Area Network” (2018) was an attempt to use near-field communication devices in the jungle. “p/q” creates rhythms from rational numbers with repeating decimals (2024). http://ingorandolf.info

PLACE: Inffeldgasse 10/1-3, IEM 2nd stairway (west side of the building, through the door behind the CUBE)

Contributions from Students at IEM:

A. DIY Sound Automata – Swarm

Student works from the DIY workshop and Summer School: Autonomous Networked Art Things playing together over wireless connections.

Cornelius Grömminger, Joris Kindler, Yulian Prots, Elias Rückborn, Arda Saraçoğlu, Peter Stiegler

PLACE: Petersgasse 116–118, at the corner of Inffeldgasse (Tram 6 stop: Schulzentrum St. Peter; entrance behind the garden terrace of Café Pail)

B. Piano Space

A contribution from IEM Computer Music: Piano with robotic piano player (Rhea), Electric String Resonator as Acoustic Instrument (ESRAI), and Ambisonics Systems.
Alternating pieces from Summer School Workshop and IEM repertoire.

"Autoklavierspieler", invented by Winfried Ritsch, is an robot piano player, also called "Vorsetzer", designed to play every common (grand) piano with individual dynamics for each key as fast as possible. A massive frame with 88 electromechanical finger, which are moved by solenoids, is mounted on a keyboard. Controlled by microcontrollers, which are driven over a dedicated computer, the Autoklavierspieler can be controlled over Network, MIDI files and realtime generated algorithmic music.

Carmen Pomet Serrano, Filip Dobrocký, Franz Gurt, Milena Schändlinger, Anton Tkachuk

PLACE: Inffeldgasse 10/3, IEM CUBE