



# **Music Program of the 14th Sound and Music Computing Conference 2017**

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**Edited by Koray Tahiroğlu and Tapio Lokki**



**Aalto University  
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School of Electrical Engineering  
School of Arts, Design, and Architecture  
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## Table of Contents

<b>Concerning the Size of the Sun</b>	<b>5</b>
<b>Spheroid</b>	<b>6</b>
<b>Astraglossa or first steps in celestial syntax</b>	<b>7</b>
<b>Machine Milieu</b>	<b>8</b>
<b>RAW Live Coding Audio/Visual Performance</b>	<b>9</b>
<b>The First Flowers of the Year Are Always Yellow</b>	<b>10</b>
<b>Shankcraft</b>	<b>11</b>
<b>The Mark on the Mirror (Made by Breathing)</b>	<b>12</b>
<b>[sisesta pealkiri]</b>	<b>13</b>
<b>Synaesthesia</b>	<b>15</b>
<b>Cubed II</b>	<b>16</b>
<b>The Counting Sisters</b>	<b>17</b>
<b>bocca:mikro</b>	<b>18</b>
<b>revontulet (2017)</b>	<b>20</b>
<b>The CM&amp;T Dome@SMC-17</b>	<b>21</b>
<b>Lightscape-Masquerade</b>	<b>22</b>
<b>Raveshift</b>	<b>24</b>
<b>ImproRecorderBot. An autonomous improvising device.</b>	<b>25</b>
<b>Tributaries of Out Distant Palpability</b>	<b>26</b>
<b>fracture</b>	<b>27</b>
<b>Burbot's Song</b>	<b>28</b>
<b>kitchen studies</b>	<b>29</b>
<b>Onus Probandi - Images of the Inaudible</b>	<b>30</b>
<b>unmooredJetty</b>	<b>31</b>
<b>The Moon Landing</b>	<b>32</b>
<b>Collage 15 "Rachmaninoff Collage"</b>	<b>33</b>
<b>Over the Horizon</b>	<b>34</b>
<b>Dicotomico</b>	<b>35</b>
<b>Sound Wrinkle</b>	<b>36</b>

# Concerning the Size of the Sun

## Vilbjørg Broch

### *Program Notes*

For computer generated sound and high voice - Text from Heraclitus' The Fragments

The work belongs to the series of works 'Seven Sphere Journey' This series explores symmetries in higher dimensional spaces for DSP and algorithmic composition. In particular structures related to the 8 dimensional division algebra: the octonions. The work origins from a deep interest in the geometries of higher dimensional spaces and their possible projections into time and 3D space. This specific composition is realized with resonance systems and generated waveforms utilizing orbits in 4,7, 8 and 9 dimensions. Synthesis and control structures are generated with octonion multiplication, Clifford algebra and multiplication in finite fields.

From Heraclitus' Fragments: Concerning the size of the sun: it is the width of a human foot - The path of writing is crooked and straight - Human opinions are children's toys - Even the barley-drink separates if it is not stirred.

### *Biography*

Have a background in dance and improvisation. Studied dance at the SND0 Amsterdam. Studied classical voice by coloratura soprano Marianne Blok for more than a decade and experimental voice techniques with members of the Roy Hart Theater. Perform improvised music for about 30 years now. Have initiated and participated in a long list of multimedia theater projects through my artistic career. Work with computer music and algorithmic composition for a bit more than 10 years. This has been interwoven with an ongoing and still deeper study of mathematics. Based in Amsterdam, born in Denmark 1967.

# Spheroid

## Erik Nystrom

### *Program Notes*

Spheroid is a live computer music work that uses improvised performance and algorithmic processes to compose spatial texture. The spine of the work is a snowballing irregular loop which sequences, deforms and attracts material as it revolves. The music seeks to evoke a form of post-natural organicity, questioning categorical distinctions between the artificial and the natural, and human and technological agency. The spatial topography created navigates territories of texture perception, where sounds group and evolve in a fleeting, amorphous manner. Spheroid was created as part of a Leverhulme Research Fellowship project about spatial texture synthesis in composition and performance.

### *Biography*

Erik Nyström is a Swedish, UK-based, composer whose output includes electroacoustic works, live computer music, and sound installations. The majority of his works are created for multichannel formats, and currently utilise real-time interactive systems for composition, performance, and improvisation. He is currently a Leverhulme Research Fellow at Birmingham Electroacoustic Sound Theatre, University of Birmingham, working with spatial texture synthesis algorithms for multi-channel music. He studied computer music at CCMIX, France, and electroacoustic composition at City University, London, with Denis Smalley. His music has been released on the disc Morphogenèse by empreintes DIGITALes.

# Astraglossa or first steps in celestial syntax

Helga Arias

## *Program Notes*

In 1952, the British mathematician Lancelot Hogben gave a lecture to the British Interplanetary Society, explaining the details of an early radioglyph scheme for interstellar communication. This lecture, entitled "Astraglossa or first steps in celestial syntax", was later developed by the author in a book of essays about various scientific topics.

Hogben suggested that numbers be represented as ordinary pulses (e.g. five pulses for the number five) and mathematical concepts, such as "plus," "minus," or "equal," each by a distinctive signal – a radioglyph. Assuming that numbers are the most universal languages, he considered this method as the only way to find common understanding between humans and extra-terrestrials.

In this musical adaptation, two aerospace engineers try to put Hogben's theories in practice in order to establish communication with alleged extra-terrestrial beings. Whether they will succeed and the unexpected responses they may get, remains to be seen.

## *Biography*

Helga Arias Parra (born in Bilbao, Spain) studied composition with Mario Garuti (Conservatorio G.Verdi Milan) and Beat Furrer (Kunstuniversität Graz) and computer music with Javier Torres Maldonado (Conservatorio A. Boito Parma) and Karlheinz Essl (Universität für Musik und darstellende Kunst Wien).

Her music tries to establish relations between acoustic and electronic resonance as well as to explore the microscopical variations of the sound phenomena.

Her music has been performed in several festivals and music halls such as the Donaueschinger Musiktage (Next Generation), Manifeste Paris, Wittener Tage für neue Kammermusik, EMUFEST Rome, Klangwerkstatt Berlin, Festival Mixtur in Barcelona, Echoraum Vienna, Experimentalstudio Academy of the SWR Freiburg, ZKM Karlsruhe (Germany), Tongyeong World Music Days (South Corea) by ensembles such as Ensemble Inercontemporain, Ensemble SurPlus, International Ensemble Modern Academy (IEMA), The Riot Ensemble, Vertixe Sonora, Nouvelle Ensemble Moderne, ECCE ensemble, Taller Sonoro, Sond'arte electric ensemble, Ensemble Cepromusic, Ensemble Progress Berlin and others.

Currently she lives and teaches in Switzerland.

# **Machine Milieu**

Agostino Di Scipio and Dario Sanfilippo

## ***Program Notes***

Today, a large variety of technical configurations are used in live performance contexts. In most of them, computers and other devices act usually as powerful yet subordinated agencies, typically piloted by performers: with few notable exceptions, large-scale gestures and structural developments are left either to the performer's actions or to well -planned automations and/or composing algorithms. At the same time, the performance environment is either ignored or 'tuned out', ideally kept neutral with regard to the actual sound events and the overall performance process. This performance project uses a different approach. The authors investigate the complex dynamics arising in live performance when multiple autonomous sound systems are coupled through the acoustic environment. In order to allow for more autonomous and adaptive -- or better: ecosystemic -- behaviour on the part of the machines, the authors suggest that the notion of interaction should be replaced with that of a permanent and continuing structural coupling between machine(s), performer(s) and environment(s). More particularly, the project deals with a specific configuration of two (or more) separate computer -based audio systems co-evolving in their autonomic processes based on permanent mutual exchanges through and with the local environment, i.e.: in the medium of sound only.

## ***Biographies***

Agostino Di Scipio (1962) explores original methods in the generation and transmission of sound in either live electronics performance contexts, chamber music or sound installation works. His achievements in that direction have received international recognition. Some of his music is available on various labels (RZ Edition, Chrysopeé Electronique, Wergo, Neuma, ...). DAAD artistinresidence (Berlin 2004), for many years professor in Electroacoustic Composition at the Conservatory of Naples. EdgarVarèseProfessor at Technische Universität (Berlin 2007), member of the research team Musiques et écologies du son at University Paris 8.

Dario Sanfilippo (1983) is a feedback systems specialist, sound artist, performer and theorist. He is currently being supported by the University of Edinburgh where he is a PhD researcher and part-time teaching fellow. His work is based on the development of complex dynamical systems for human-machine interaction performance, autonomous sound installations and non-conventional music and sound synthesis techniques. His work has been presented in festivals, conferences, research centres and universities internationally.

# **RAW Live Coding Audio/Visual Performance**

## **Selcuk Artut and Alp Tugan**

### ***Program Notes***

RAW is a live coding duo creating Audio Visual Performances

### ***Biographies***

Selçuk Artut (1976) lives in Istanbul. Artut spends much of his time philosophising human- technology relations. An author of four books in the past, his artistic activities are mainly focused on contemporary art practices based on technological embodiments. His art works have been exhibited at ICA London, Istanbul Biennale, Moving Image NY, Art Hong Kong, etc. Artut has received his BSc in Mathematics from Koc University, Istanbul/TR, MA in Sonic Arts from Middlesex University, London/UK and received his PhD on Philosophy of Media Communications, Switzerland. Artut is also a member of a Istanbul based Post-Rock Avangard music band Replikas. Artut is artistically represented by Gallery Zilberman, Istanbul [www.selcukartut.com](http://www.selcukartut.com)

Alp Tugan (1983) Alp Tugan is an interaction and sound designer living in Istanbul, Turkey. Tugan received his MA degree from Visual Arts & Visual Communication Design Department, Sabanci University Istanbul. He is the cofounder of Filika Interactive since 2011 with Selcuk ARTUT focusing on building Interactive System involving software and hardware components. Tugan also teaches Interaction Design courses at Ozyegin University, Istanbul TR. [www.alptugan.com](http://www.alptugan.com)

# The First Flowers of the Year Are Always Yellow

Una Lee and Miguel Ortiz

## *Program Notes*

It is a live performance piece that highlights the relationship between human body and memories. As a collaborative piece between two artists who usually engage with rather distinct interests from each other within their practices, the piece is unique blend of embodied music mediation technology and theatrical storytelling. These aspects are represented through the roles that two artists take up, one as a distanced figure existing through video, the other as live presence – writer and his fictional character. The two firstly seem to exist as independent entities, by which one is in ostensible control of the other. These roles, however, over the course of the development within the piece conceptually merge into one, epitomising the ambiguities found within the distinction of human body and mind in regards to storing and recalling of memories.

The work explores various theories and ideas about different types of human memory: in particular, those kinds that regard something other than one's own brain such as body memory, cellular memory, muscle memory and even collective memory. Muscle sensing technologies are employed to musicalise the narrative; the character uses gestures, movement, and tension to highlight the role of the body in activating stored memories in our everyday lives.

## *Biographies*

Una Lee is a sound artist, performer and improvisor. She composes and designs her own performances and intervention scenarios, either live or fixed, or a combination of both. Many of her works incorporate interdisciplinary aspects that blend performance art, visual art and theatre practice. She is currently pursuing her practice-led PhD at Sonic Arts Research Centre at Queen's University Belfast.

Miguel Ortiz is a Mexican composer, sound artist, and Lecturer at Queen's University Belfast. His work focuses on the use of sensing technologies for creative applications, specifically Digital Instrument Design and its intersection with Composition and Improvisation.

## **Shankcraft**

Jeffrey Morris and Sergio Castrillón

### ***Program Notes***

A composed improvisational environment for audiovisual live sampling. All digital sound is sampled from the acoustic performer live during the performance. All video is a live processed feed of the performer's arms at work, exploded into full textures that immerse the audience in sensing the “Now”: hearing live moments sampled, transformed, and reintroduced to further influence the performance, with abstract visuals that are organically connected to the actions that cause the sounds they hear. The visuals are also influenced by the sound, and the visuals in turn influence the performers like a graphic score.

### ***Biographies***

Jeff Morris creates experiences that engage audiences' minds with their surroundings. He has presented work in the Triennale Museum (Milan) and Onassis Cultural Center (Athens), and his genre-bending interdisciplinary work has won awards in the “Music in Architecture” International Symposium (Austin), Concours de Bourges (France), the Un“Cage”d Toy Piano Competition (NYC), and the “Radio Killed the Video Star” Competition for radio-based performance art (NYC).

Sergio Castrillón is an Argentinian cellist, improviser, composer, curator, researcher, and educator. Now based in Helsinki, he brings together communities of musicians in South America, Scandinavia, and Southern Europe.

# The Mark on the Mirror (Made by Breathing)

Hugh Sheehan

## *Program Notes*

The Mark on the Mirror (Made by Breathing) raises questions of identity, the concept of home, migration, and movement.

The piece employs a triptych of sonority, visual media, and movement, and explores their relationships to one another. The piece uses a hacked GameTrak Controller - a device originally marketed as a PC golf game controller, that was short-lived in the gaming world but has since been adopted by the DIY/Hacking music and arts community, and custom MaxMSP audio and visual tools.

The work takes its name from a Dieter Appelt photo and alludes to mark-making, time, and ephemerality.

## *Biography*

Hugh Sheehan (b. 1992, Birmingham, UK) is a musician who's work traverses composition, performance, improvisation and sound art. In 2015 he graduated from the Royal Welsh College of Music and Drama with a BMus (Hons) in Composition and Music Technology. He is now studying on the MMus program in the Centre for Music & Technology at Sibelius Academy in Helsinki, Finland. His working methods span the intersections of improvisation, prescribed process, and writing. Works are generally created for and with specific artists; products of an exploratory collaboration process, with agency being a key aspect. He plays electronics and diatonic button accordion (B/C).

## [sisesta pealkiri]

Shelly Knotts and Alo Allik

### *Program Notes*

This is an experimental collaboration between Shelly Knotts and Alo Allik, two artists who explore the nature of digital environments in the context of live coding from mutually augmenting perspectives. They create an audiovisual data- feedback loop by writing computer code live on stage and exchanging musical information over the network. The performance seeks novel ways of using machine learning algorithms to aid performers in decision making process and explores different methods to control generative algorithms using live coding as the interface to musical expression. The sonic nature of the performance is developed while improvising with various algorithmic synthesisers some of which have been evolved in the course of experiments with gene expression programming. Gene expression programming offers an alternative approach to the genetic paradigm evolving populations of candidate solutions as valid computer programs that can be used for a potentially wide range of problem solving tasks, including sound synthesis. The sound synthesis server is instructed through unit generator graph functions to calculate a desired sonic outcome. These graph functions are essentially enclosed computer programs that can be encoded into linear chromosomes according to the principles of gene expression programming and evolved by evaluating their fitness and subjecting them to genetic operations. The design of the fitness functions involves statistical methods and machine listening algorithms in an attempt to automate the supervision of the synthesis process. The performative aspect will emerge from managing the hundreds of evolved synthesizers through live coding and guiding the digital evolution in real time as the genetic agents attempt to converge towards the ensuing sonic realm. The visual aspect of the performance seeks to combine 3-dimensional generative graphics with the traditional live code projection, trying to create a visual world where the code becomes an aesthetically significant component of the dynamic world of swarm and cellular automata algorithms. For this performance the musical interchange will occur over a network between Finland and Australia.

### *Biographies*

Shelly Knotts produces live-coded and network music performances and projects which explore aspects of code, data and collaboration. Her experimental and collaborative tendencies have seen her engage with diverse musical practices and styles ranging from electroacoustic tape music to live-coded dance music. She performs internationally, collaborating with computers and other humans.

She is studying for a PhD in Live Computer Music at Durham University. Past affiliations include BEAST (Birmingham ElectroAcoustic Sound Theatre) and SOUNDkitchen. Her work is published on Chordpunch record label, Absence of Wax netlabel and in Leonardo Music Journal. She has received commissions and

residencies from PRSF and Sound and Music. Current projects include network laptop bands BiLE and OFFAL (Orchestra For Females And Laptops) and live coding performance [Sisesta Pealkiri] with Alo Allik.

Alo Allik is a sound artist who has performed his live coded electronic music and generative computer graphics throughout the world. His aesthetically and geographically restless lifestyle has enabled him to traverse a diverse range of musical worlds including DJ-ing electronic dance music, live electronic jam sessions, electroacoustic composition, free improvisation and audiovisual performances. He has forged collaborations with a number of curious and innovative musicians, writers and visual artists along the way focussed on exploring links between technology, creativity and tradition. In recent years he has been actively participating in the Algorave movement developing a style he describes as noisefunk which combines traditional rhythm patterns with evolutionary synthesis algorithms. Currently, Alo works as a researcher at the Centre for Digital Music, Queen Mary University of London, while continuing to perform his music and visuals to audiences worldwide.

# Synaesthesia

## Michele Abolaffio

### *Program Notes*

Synaesthesia is a live electronics solo performance involving biophysical sensors and active lighting. Synaesthesia aims to explore the musical and corporeal performance practice built upon the active stimulation of the senses of sight, hearing and the perception of the muscles. The performance is based on a synesthetic system composed of wearable sensors that respond both to bio-signals and dynamically controlled lighting. The qualities of small movements and actions done by the performer are put in the foreground of the audience's perception, amplifying them and extending the perception of the performer's body over the audience space.

### *Biography*

Michele Abolaffio is a live electronics performer, sound engineer and interface developer. He studied at the Conservatory of Firenze "L. Cherubini" where he earned a BA degree in Music and New Technologies. He is currently a Master student in "Instruments & Interfaces" at the Institute of Sonology in The Hague, in collaboration with the STEIM Institute in Amsterdam. His artistic and technological research focuses on the development of biophysical musical instruments for live performance. He collaborates as live electronics performer with the Sonology Electroacoustic Ensemble in Den Haag. He develops interactive sound installations together with the OHM artists collective.

## Cubed II

Marloes van Son

### *Program Notes*

Performance of a new experimental score, that originates from Marloes van Son's Devices-project.

The Devices-project consists of experimental instruments with alternative interfaces. These devices appropriate simple electronics as sound generators combined with interfaces from common household appliances or slightly absurd control panels. Their aim is to trigger curiosity and sonic exploration, as they are originally meant to be playable by an audience. As an invitation for the audience and as a demonstration of its possibilities compositions as well as scores were developed. Since the devices are not entirely stable, nor predictable, these performances are based on notations of presets. The performed composition emerges from transitions between these notated presets, when the performer reads the score.

### *Biography*

Marloes van Son builds systems, installations and instruments. The electromechanical objects that she develops, explore natural phenomena and everyday appliances. By repurposing ordinary objects, she aims to create unusual, yet familiar experiences. Many of her works start from a visual component, but sound is always an integral part of the eventual piece. Recent events include a solo-exhibition in the Tekniikan Museo (FI), a group show at Galleria Huuto and a performance in Third Space (FI). Some of the festivals she contributed work to are the DASH festival (FI), ITGWO festival (NL), and Shiny Toys festival (DE). [www.marloesvanson.nl](http://www.marloesvanson.nl)

# The Counting Sisters

Julia Mihály

## *Program Notes*

The stage performance is an allegory for a ritual of „counting the dead“ as told in the story of "The Counting Sisters" by Amar Kanwar, based on Indian folk tales, where six women (in an act of political resistance) collect information around people who recently died due to political „issues“. Further it is the translation of a general phenomenon of digital interconnection: The more information we receive, the less we notice. The more we see, the less we see. Voice & resonating body form the nucleus of all sound and stand in interactive correspondence with a real-time sound modulating Max7 patch. The performer's body functions as a projection surface for visual translations of text immanent processes. Certain parameters of the electronics are controlled by a motion sensor attached to the performer's hand. In this way the body extends from raw performative expressions to a tool of interaction between the performer and the computer. The voice is modulated, entering delay lines with exible movements within a stereo panning, ring modulation, spectral delay with FFT, comb Iter and pitch shifting.

## *Biography*

Julia Mihály (\*1984) is an artist at the border of Contemporary Music, Performance Art, and Electroacoustic Music. She connects her voice with live-electronics using di erent interfaces to extend her vocal sound and to explore the progress of the performer-computer interactivity. She studied classical singing and electronic composition at the HMTMH Hanover. Concert tours brought her to festivals in Germany, Singapore, France, Denmark, Hungary, Poland, Turkey, Brazil, Japan and the Sultanate of Oman. Julia Mihály currently teaches "Composition and Technology" at the University for Music and Performing Arts Frankfurt. She is a board member of the German Society for Electroacoustic Music (DEGEM).

## bocca:mikro

Alo Allik and Andrea Young

### *Program Notes*

bocca:mikro is an audiovisual improvisatory collaboration between Canadian composer and performer Andrea Young and Estonian audiovisual artist Alo Allik. In this performance, the worlds of vocal experimentation, interactive machines and audiovisual environments collide as the catalysing vocal input of bocca provides a source for the mikro system and the ensuing audiovisual environment, exploring the cultural and technological connotations of the schism between the natural and the artificial.

bocca is an improvisation for voice and voice-controlled electronics which uses vocal feature extraction to control variables in algorithmic synthesizers. The combination of amplified voice morphing into voice-controlled machine noise extends the human voice, infuses electronics with the vocal envelopes and blurs the boundaries between voice and electronic sound. This work is performed through Kyma from Symbolic Sound.

mikro is an audiovisual improvisation system comprised of artificial improviser agents who learn about musical structure from the incoming vocal improvisation as well as from other musical examples with the aid of various machine listening and learning algorithms. mikro was created in the process of exploring artificially intelligent computational strategies for live performance. The synthetic instruments used in the performance are selected from a large database of synthesis definitions evolved with evolutionary algorithms imitating the myopic processes of evolution by natural selection. The machine listening processes also inform the generative world of computer graphics which explore a non-linear relationship between the modalities, each asserting independence within its domain while finding points of convergence at times. These sounds are synthesised with SuperCollider while the graphics are generated with Cinder C++ libraries.

bocca:mikro has been performed at the Intersections festival in London, the University of Hull in Scarborough (UK), and at the California Institute of the Arts in Valencia, California (USA) over an internet connection enabled by the JackTrip software used for multi-machine network performances.

## ***Biographies***

Andrea young is a Canadian composer and vocal performer living in Valencia, California, where she is completing a DMA at The California Institute of the Arts. During this residency, Andrea is researching vocal feature extraction, voice-controlled electronics and live electronic processing while preparing compositions that integrate this research with practical experimentation. Initial studies in Vocal Performance and Composition at The University of Victoria, 2001, led to a Masters Degree of Music in Sonology from The Royal Conservatory, Netherlands in 2007. Commissions and performances have involved Quatuor Bozzini, The Manitoba Chamber Orchestra, The Calgary Philharmonic Orchestra, The Chop Theatre, The Tomorrow Collective, Presentation House Gallery and Ensemble Sisyphe. Andrea has premiered new works in Los Angeles, Vancouver, at the Casino Baumgarten in Vienna, Austria, Het Muziekgebouw aan 'T IJ in Amsterdam, Netherlands, and ZKM Centre for Art and Media in Karlsruhe, Germany. In 2008 Andrea young founded the VOICE/wire series: a collection of new works for voice and electronics. This series has been enabled by several awards from the Canada Council for the Arts and the BC Arts Council between 2008 and 2012. Recently, Andrea has premiered new works by composer André Cormier and performed with Herménégilde Chiasson and Suno No Onna in Moncton, NB, at the Re:Flux Festival, premiered original works at the wulf in Los Angeles, created electronic sound design for two animated videos by Allison Hrabluik at the G Gallery in Toronto and MASS MoCA, performed her VOICE/wire series during Innovations en Concert in Montreal, and premiered voice-controlled electronic compositions at The International Kyma Sound Symposium in Minnesota. Future endeavours include sound design for the multi-media theatrical rendition of Michael Turner's novel "The Pornographer's Poem" and a performance of her newest works for solo voice and electronics during RedCat's NOW Festival in Los Angeles.

Alo Allik is a sound artist who has performed his live coded electronic music and generative computer graphics throughout the world. His aesthetically and geographically restless lifestyle has enabled him to traverse a diverse range of musical worlds including DJ-ing electronic dance music, live electronic jam sessions, electroacoustic composition, free improvisation and audiovisual performances. He has forged collaborations with a number of curious and innovative musicians, writers and visual artists along the way focussed on exploring links between technology, creativity and tradition. In recent years he has been actively participating in the Algorave movement developing a style he describes as noisefunk which combines traditional rhythm patterns with evolutionary synthesis algorithms. Currently, Alo works as a researcher at the Centre for Digital Music, Queen Mary University of London, while continuing to perform his music and visuals to audiences worldwide.

## **revontulet (2017)**

Rachel Devorah

### ***Program Notes***

Auroras operate on a geophysical scale beyond the scale of human comprehension. Though humanity has ways of attempting to understand these phenomena – narrative explanations with quantitative and qualitative data – auroras remain beyond human comprehension because our understanding of the universe is limited by the conditions of our humanity.

revontulet is an intermedial sonification of aurora data – both quantitative and qualitative.

The quantitative part of the work is magnetometer data and all-sky camera footage from the aurora borealis activity of January 2017 as captured by the Sodankylä Geophysical Observatory. Magnetic flux density is mapped directly to sine wave hertz with no scaling using SuperCollider.

The qualitative part of work includes audio recordings of interviews taken by the artist with three women who have witnessed the aurora: Evelyn Müürsepp Grzinich, a mixed media artist from Estonia; Dr. Hannah Dahlgren, a space and plasma physicist from Sweden; and Inari Virmakoski, a performance artist from Nurmes.

This work is supported by the International Alliance for Women in Music's Ruth Anderson Prize.

### ***Biography***

Rachel Devorah is an American sonic artist living in Paris whose research explores context-specific practices as sites of feminist resistance and reimagining. Her work has been heard in more than 10 countries on 4 continents; has been performed by artists such as Fred Frith, JACK quartet, and Laurel Jay Carpenter; and has been supported by residencies at Elektronmusikstudion, MoKS, and STEIM. Her writing has been published in Emergency Index, Feminist Media Histories, and parallax. She studied at the City University of New York, Mills College, and the University of Virginia. <http://racheldevorah.studio/>

## The CM&T Dome@SMC-17

Dominik Schlienger, Otso Lähdeoja, Luis Alejandro Olarte, Juan Carlos Vasquez, Marianne Decoster-Taivalkoski, Jamie Belmonte, Heidi Hassinen, Viktoria Korshunova, and Bastadjian Roupen

### *Program Notes*

The works to be presented in the CM&T Dome@SMC-17 are an eclectic selection of compositions by composer-researchers and students of Sibelius Academy's Centre for Music & Technology. The compositions vary in length from a few minutes to over an hour. The works are written with an audience in mind which drifts in and out of the dome, maybe remains for a while and comes back later: A sound Installation. Programme notes and some biographical notes for all individual pieces and their composers can be read in situ, as part of the installation.

### *Biographies*

Alejandro Olarte is an electroacoustic musician devoted to pedagogy, live performance and digital lutherie. He's a Doctoral student at CM&T. Juan Carlos Vasquez, is a Colombian composer, sound artist and audio researcher from the Media Lab Helsinki, Aalto University. Otso Lähdeoja is a Finnish composer, guitarist and postdoctoral researcher in digital arts at CM&T. Dominik Schlienger, is a musician and composer- researcher and Doctoral student at CM&T. Jamie Belmonte, Heidi Hassinen and Viktoria K (Korshunova), are MSc students at CM&T, Marianne Décoster-Taivalkoski is Head of Department of CM&T.

# **Lightscape-Masquerade**

## Mengtai Zhang and Pohao Chi

### ***Program Notes***

“Masquerade” is a generative composition in Lightscape project. This project centralizes on the complex intersection of sites, lights and sounds which is represented in the urban ‘sites’ of visual cultures and associated discourse. One ought to reinterpret the causal relationship between the city’s environment and its citizens. Simultaneously, there is a blurred distinction: to comprehend whether people are living in the city or have been surrounded, even consumed by the city. The video filmed in the Times Square, walking with a 360-degree camera to record visual impacts from massive numbers of screens, lights, and advertisements. The bustling lights throughout the city signified the desire of for-profit business fame, therefore, the fame emphasizing the illusion of time, place and social characters. The generative music system transformed the flow of light points in panoramic video into corresponding resonances. The changes of the lights in the video triggered sine wave oscillators and produced the ambient sound in different dynamics and frequencies according to its trends and patterns. This work will bring together elements of light and sound from different routes within the city, each masking the other, and serving as the basis for visual and aural interaction as manifest in video and installation.

### ***Biographies***

Mengtai Zhang was born in China. He gained a BA degree in Fine art at Goldsmiths, University of London, and a MFA degree in Fine arts at School of Visual arts. He works in participatory elements, sounds and installations, concerned with comprehensively and meticulously rendered allegories of power. Considering make the unfamiliar familiar and raise the awareness about social justice and environment through the listening and sound making. His works been presented in London, China and New York, which included MOCA Shijiazhuang (2014), Handshake 302 (2016), Art Shenzhen 2016, and Space Heater Gallery (2017).

Chi Po-Hao is a musician and sound artist from Taipei. He holds a Master of Music Degree from Goldsmiths College, University of London and Bachelors Degree in Economics from National Taiwan University. His primary medium is sound, had experiences in band and event organising. His works, principally involving but not limited to live electronic, electroacoustic composition and installation. He usually applied self-made tools and found objects that are based on electronic devices, everyday materials and junk, as well as customised tools developed in Max/MSP in performances. His undergoing works are mainly concerned about the sensing of everyday rhythms when extending the interactions among perception, individual and environment, try to investigate how people hear, interpret and represent the sound surrounded us as well as how the sound intervene the space. He was granted

residencies at V2\_Institute of Unstable Media in Rotterdam(2014), Cité Internationale des Arts in Paris(2015-16), Asia Art Archive in Hong Kong(2016), Laboral Centro de Arte in Gijon, toured around Taipei, London, Wales, Manchester, Paris, Rotterdam, Beijing, Yinchuan, Lanzhou, Shenzhen and Macau, Hong Kong.

# Raveshift

## Jeffrey Morris

### *Program Notes*

The voice of the machine: Listen to the wide variety of timbres, rhythm, and textures that come out of a simple feedback loop and ONLY a 1 second delay—no other processing besides moving my body and objects in front of the speaker. Reposition the hanging dome and hear the rhythm evolve.

### *Biography*

Jeff Morris creates experiences that engage audiences' minds with their surroundings and everyday technology. He has presented work in the Triennale Museum (Milan), Onassis Cultural Center (Athens), D-22 (home of Beijing's avant garde scene), and International Symposium on Electronic Art (Vancouver). His genre-bending interdisciplinary work has won awards in the Viseu Rural (Portugal), Concours de Bourges (France), and "Music in Architecture" International Symposium (Austin). Writings about his works and their aesthetics have been presented at the International Computer Music Conference, Generative Art International Conference, and Computer Art Congress and are published by Leonardo Music Journal, Springer, and IGI Global.

# **ImproRecorderBot. An autonomous improvising device.**

Hans-Gunter Lock

## ***Program Notes***

ImproRecorderBot is an installation for autonomous improvisations. In the center of this installation there is an robotic recorder. The robotic recoder is not tuned in common pitches, the original holes are closed and drilled new ones, which will achieve the so called Bohlen-Pierce scale (every step is around a three-quarter tone). Solenoids will open and close the holes, and a compressor will provide air with the needed pressure. The compressor stands in the back and aside the scene. Compressor and recoder are connected with a translucent flexible tube, which is positioned in slobes. While the room is empty, only a background sound is present and the room is illuminated with a quite low lighting level. When audience enters, after 10-20 seconds the installation "wakes up", spotlight comes up to the robotic recoder and it will play a realtime-generated improvisation, approximately 20-40 seconds. After a break (ca. 20 seconds) the robotic recoder will play another improvisation. After 8 to 10 improvisations the installation would fall into sleep for a longer time (3-5 minutes). Then, all starts again. Every improvisation will be unique, but there will be different types of improvisations: solo improvisation, improvisations with automatic harmonisations by electronic sounds, improvisations in different time scale, improvisations with more ore less contrast in time or pitch structure. From time to time, the RGB color lights will act light-organ-like and display for every pitch a different light color. If nobody is anymore in the room, the robotic recorder ends the improvisations and the background sound remains.

## ***Biography***

Hans-Gunter Lock (born 1974) is composer and musicologist residing in Estonia since 2000. His creative work consists mainly of electronic, chamber music and interdisciplinary projects (including lighting, video, performance, and installations). From 2000 to 2007 he has worked as a consultant at the Electronic Music Studio of the EAMT. Since 2002 he is employed as lecturer at the EAMT teaching composition and electronic music related subjects, e.g. sound synthesis, algorithmic composition, and microtonal music. Since 2007 he hold the position of the head of the New Media Lab at the Estonian Academy of Arts.

# Tributaries of Out Distant Palpability

## Matthew Mosher, Tony Obr, and Danielle Wood

### *Program Notes*

Tributaries of Our Distant Palpability takes form as a swelling sea anemone, while the sounds it produces recall the quagmire of a digital ocean. The sculpture responds to changing light levels with a dynamic mix of audio tracks, mapping volume to light level. People passing by the sculpture, or directly engaging it by creating light and shadows with their smart phone flashlights, will trigger the audio. The piece was inspired by the searching gestures people make and emotions they have while idly browsing content on their smart devices. In this collaborative project Matthew Mosher designed the interactions, Tony Obr designed the audio, and Danielle Wood created the ceramics. A video demo of the piece is available at [http://matthewmosher.org/portfolio\\_entry.php?art\\_id=108](http://matthewmosher.org/portfolio_entry.php?art_id=108).

### *Biographies*

Matthew Mosher is an intermedia artist and research professor who creates embodied experiential systems. His public installations, dynamic performances, and experiential systems bridge the physical and digital worlds by mixing new media, sensing technology, relational aesthetics, computer programming, collaborative practice, and traditional sculpture processes. Mosher exhibits his work across the United States, and internationally in India, China, and the Netherlands. His research is published in the ACM CHI, TEI, and NIME conference proceedings.

Tony Obr is a musician, sound designer, composer, visual artist and educator. His work is situated at the confluence of art, technology, and performance, focusing on innovative uses of sound in a non-musical context, often centering on the development of interactive systems for electronic music performance, dance, and art installation. His musical work under the moniker tsone has been released on a number of international recording labels.

Danielle Wood's work involves abstract forms inspired by introspection, ocean life, nature, shapes, and color found in the desert landscape, and is also symbolic of the inner psyche. She splices textures and shapes she observes in her environment to accumulate and create new organic ceramic forms. She has completed residencies at Anderson Ranch, Arrowmont, and the Farm at South Mountain.

# **fracture**

John Burnett and Sage Jenson

## ***Program Notes***

fracture is an interactive audiovisual installation prompted by the accelerating rate of climate change and the contamination of water sources via fracking. This installation models virtual environments that the audience, through sensors, are able to manipulate – highlighting the agency of an individual to preserve the environment or become complicit in its destruction. fracture uses real-time video processing along with the manipulation of field recordings to decompose the environments. The source material consists of images, time-lapses, and audio taken from Big Bend National Park, an area in Southwest Texas threatened by the construction of the Trans-Pecos Pipeline. In terms of implementation, fracture uses the openFrameworks graphics library and GLSL for real-time parallelized graphics processing and SuperCollider for real-time audio. The SuperCollider audio application sends OSC data to the C++ graphics application to sync events between the two mediums. A Raspberry Pi along with an infrared camera are used to detect the presence of bodies in the space, which advance the decay of the virtual environments.

## ***Biographies***

John Burnett is a sound artist and technologist interested in contemporary art-forms as platforms for expression and activism. John uses the areas of music composition and computer science to create technologically augmented concert works and installations that derive their materials from the present environment. They engage in research in real-time audio and graphics processing, graphical music notation, and cultural criticism of sound and music. John is a graduate of Oberlin Conservatory and is currently attending UC San Diego in the pursuit of a PhD in music composition.

Sage Jenson is a multimedia artist interested in constructed realities. A member of Oberlin College and Conservatory '17, Sage is majoring in mathematics, computer science, and TIMARA (technology in music and related arts). They work with interactive media and dance, video art, and electroacoustic composition. Sage's academic interests include computer graphics and physical simulation, with papers including "Organic Mesh creation through Particle-Based Simulation," published in Bridges Conference'16. After Oberlin, Sage will pursue a PhD researching the symbiosis between technology and the arts.

# Burbot's Song

## Petri Kuljuntausta

### *Program Notes*

The song of Burbot happens around the frequency area of 110Hz, it is rhythmical, even mechanical; some might think that it is a bass drum sound coming from a drum machine. In the exhibition space this sound is coming from a subwoofer. The underwater sounds (hydrophone recordings) of the Baltic Sea will be played as an ambient sound through a pair of speakers, or directive Panphonics speaker or Genelecs, if available, in the exhibition space. Video is played through a video monitor. All the technical elements of the installation, speakers and video monitor, are covered with the nets.

The work has been made in collaboration with the following scientists and institute, with thanks to Adjunct Professor Pete Cott (Burbot sound recording), chemical engineer Mike Guo (Burbot video recording), and the Finnish Environment Institute SYKE and Bias research project (hydrophone recordings at Baltic Sea). The previous version of the work was exhibited at the Rauma Biennale Balticum 2016 'Vulnerability' exhibition in Rauma Art Museum in 2016

### *Biography*

Petri Kuljuntausta is one of the most celebrated electronic artists in Finland, the author of the 'On/Off', the definitive history of Finnish electronic music, 'First Wave', a microhistorical analysis of early electronic music, and 'eXtreme Sound', a review of the whole experimental scene and on his own approach to music. Kuljuntausta has performed or collaborated with Morton Subotnick, Atau Tanaka, Richard Lerman, David Rothenberg, and Sami van Ingen. He has made recordings for various labels in Australia, England, Finland, France, Germany, India, Sweden and the USA. In 2004 Star's End and Inner Space radio shows selected Kuljuntausta's "Momentum" as one of the most significant CD releases of the year. In 2005 he won an award, The Finnish State Prize for Art, from the Finnish government as a distinguished national artist.

# kitchen studies

Daniel Mayer

## *Program Notes*

The piece reflects my recent attempt to investigate the fascinating and vastly still undiscovered areas of granular synthesis. It succeeded a number of mixed pieces (*Lokale Orbita*s), where instrumental sounds and playing techniques, which I had recorded with collaborating musicians, provided a starting point for granular textures.

Subsequently I decided to explore more refined technical possibilities of granular synthesis itself: within the SuperCollider language I developed the class *PbindFx*, which allows to define a sequencing of arbitrary effects and effect graphs on per-grain base. All parameters can be sequenced with a very condensed syntax emerging from SuperCollider's powerful pattern framework. In this context *kitchen studies* is also an artistic research project and a didactical effort, that I'm going to extend in several steps: *PbindFx* and the single *kitchen* sound of five seconds, from which the whole piece is derived, are already part of the SC extension library *miSCellaneou*s. For version 0.15 I've added the commented source code, which produced the six parts of *kitchen studies*. A further documentation of the compositional process is going to be developed as exposition in the artistic research database *Research Catalogue*

(<https://www.researchcatalogue.net/profile/show-exposition?exposition=324609>).

## *Biography*

Daniel Mayer (\*1967) is a composer, active in the fields of sound synthesis and generative computer algorithms, where he is developing dedicated software. He studied pure mathematics and philosophy at the University of Graz (MSc, MPhil) and music composition (MA) with Gerd Kühr at the University of Music and Performing Arts Graz, Austria. 2001/02 postgradual study at the electronic studio of the Music Academy of Basel, Switzerland, with Hanspeter Kyburz. Since 2011 working at the University of Music and Performing Arts Graz/IEM, since October 2016 visiting professor for electro-acoustic composition. <http://daniel-mayer.at>

# **Onus Probandi - Images of the Inaudible**

## **Woon Seung Yeo and Ji Won Yoon**

### ***Program Notes***

Human auditory perception is extremely limited. Numerous sounds that are surrounding us remain unheard because they are too soft, too high or too low, thereby being meaningless and practically non-existent. As physical sounds, however, we believe they still can become the source of (and even constitute the essential part of) our music.

"Onus Probandi 2017 - Images of the Inaudible" (music composed by Ji Won Yoon, visual by Woon Seung Yeo) is an experimental piece with which we pose this question on the existence and perception of sound in the context of audiovisual synesthesia. Virtually inaudible spectral components of music are exaggerated to be shown as visual proofs of their existence, allowing the audience to see what cannot be heard and eventually feel the sonic illusion in a cross-modal way.

Sound of the piece is based on female/male voices reading books or having casual conversations. Being "blurred" intentionally, these voices can hardly be understood but are rather presented as raw, physical materials together with other virtually inaudible components. Visual of the piece is generated through short-time Fourier transform (STFT) of the music using Processing.

### ***Biographies***

Woon Seung Yeo is a bassist, media artist, and computer music researcher. He is Associate Professor at Ewha Womans University, Seoul, Korea, and leads the Audio and Interactive Media(AIM) Lab. Mr. Yeo has received B.S. and M.S. degrees in Electrical Engineering from Seoul National University, M.S. in Media Arts and Technology from University of California at Santa Barbara, and M.A. and Ph.D. in Music from Stanford University. His research interests include audiovisual art, cross-modal display, musical interfaces, mobile media, and audio DSP. Results of his research are commonly shared by exhibitions and performances in the public interest.

Ji Won Yoon is active as a composer of both acoustic and electroacoustic music. She is interested in artistic applications and realizations of various computer music technologies, emphasizing multi-modality with sound at the center. She earned her B.A. and M.A. degrees in Music (Composition) from Yonsei University, completed doctoral course in Computer Music Composition at Dongguk University, and studied at the Center for Computer Research in Music and Acoustics (CCRMA), Stanford University as a visiting researcher. Currently she is Assistant Professor at the Department of Music Production, Artech College, Keimyung University.

# **unmooredJetty**

## Christopher Jette

### ***Program Notes***

As noted by an eminent candy proprietor noted that, the seemingly stationary collection of concrete and stone that constitutes a jetty, can float. Lacking the security of an anchor or docklines, a jetty shall be considered unmoored. It is common for a jetty to remain securely moored at all times. A mooring load monitoring system (MLMS) can be installed on a jetty. All moorings will be passed from jetty to shore using a combination of heaving line and shore messenger on an endless loop. A terminal's general service launch (GSL) is equipped to act as a mooring boat if required, but this will only be used in case of a genuine difficulty, e.g. failure of the mooring dolphin winch. A jetty must have a sufficient supply of good quality heaving lines of sufficient length to reach the furthest dolphin as per the agreed mooring plan. A terminal will provide the messenger lines and GSL. A GSL must have an internal combustion engine of varied sonic character to provide contact microphones with primary sound material for an unmoored Jetty.

### ***Biography***

Christopher Jette is a curator of lovely sounds, creating work as a composer and new media artist. His creative work explores the artistic possibilities at the intersection of human performers/ creators and technological tools. Christopher's research details his technical and aesthetic investigations and explores technology as a physical manifestation of formalized human constructs. A highly collaborative artist, Jette has created works that involve dance, theater, websites, electronics, food, toys, typewriters, cell phones, instrument design and good ol' fashioned wood and steel instruments. In addition to creating concert music, Christopher explores Creative Placemaking through site-specific and interactive work as a core-four member of the Anchorage based Light Brigade. In 2015-16 he was the Interdisciplinary Grant Wood Fellow and currently is an Artist in Residence and Technical Staff at CCRMA. Learn more at [www.cj.lovelyweather.com](http://www.cj.lovelyweather.com)

# The Moon Landing

## Hyemin Seo

### *Program Notes*

I imagined watching the moon, which is about 390,000 kilometers away from Earth. Every night I always see the planar moon, only one side of the moon when I see it from the earth, and it looks like there is no change other than changing the phase of the moon. What I realized that it is just a static image, but it seems as if a lot of things are happening near the circular frame. The changes and movements of the light, the texture, the shape, etc. of the light surrounding the moon that I watched by the moon and imagined about were shown in my works.

The title of the work has two meanings: “landing on the moon” and “the moon (metaphysically) landing into our daily lives.”. Particularly emphasis on the latter meaning, I also dream of landing on the moon, but I hope the moon will land anywhere where this work is located.

### *Biography*

Hyemin SEO is a South Korean Artist who is fascinated by various empirical meanings of the essence of sound itself. Based on the electroacoustic music she pursues the original form of nature, human being and matter, and she works with possibilities that arise from their interrelationships.

She has been expanding her interests in the field of various audio-visual art since she presented her own music at the 2009 FEST-M from the Korea Electro-Acoustic Music Society.

## **Collage 15 “Rachmaninoff Collage”**

Juan Carlos Vasquez

### ***Program Notes***

Radical electroacoustic temporal/spatial defragmentation of "Etude-tableaux, Op. 33 No. 5", by Russian composer Sergei Rachmaninoff. Collage 15 is a brand new instalment of the "Collages" series, digital sonic portraits of classical music composers premiered in 26 countries so far.

As many of the audio processes feature randomisation, the composer selected the present version after listening to nearly 100 versions of the piece.

### ***Biography***

Juan Carlos Vasquez is a Helsinki-based composer and sound artist from Colombia. Vasquez participates constantly as a sonic artist, composer and/or performer in events within Europe, Asia, America and Australia. In 2014 his critically acclaimed series of electroacoustic pieces inspired on classical composers, “Collages”, was released by American label Important Records / Cassauna, selling out shortly afterwards. “Collages Vol 2” is set to be released in 2017. Vasquez currently works at the Media Lab Helsinki, Aalto University

# Over the Horizon

Pietro Bonanno

## *Program Notes*

‘Over the Horizon’ is a four channels electronic composition based on sampling, treatment and interaction of multiple sound sources recorded among short-wave frequencies between 2 and 30 MHz. The idea behind the composition is to create a dialogue between technical frequencies (OTHR, R2DBI and CODAR) and broadcasting (BSKSA Holy Quran, Radio Saudi) to investigate the distance from a geographical and cultural point of view. So Ocean Radars and the voice of the Arab Singer serve as imaginary circumference of a center in which is placed the listener, from anywhere in the world he comes from. The materials - recorded by WebSDR dell'Università of Twente (NL) - were treated with CSound through techniques related to the modulations used in the radio (AM) and granulation. The constant rate of the OTHR is the primary component in the broader rhythm of the composition, hence the title.

## *Biography*

Pietro Bonanno was born in Palermo (Italy) where he graduated in piano with the highest marks and where he got a MA with honors and honorable mention in Electronic Music. Since 2002 he is interested in electroacoustic composition, specially in soundscape studies, approaching in these years the subject under many aspects, in particular the ecological and the multimedia ones. In 2013 he founded with Fabio R. Lattuca the VacuaMoenia association, with the intent of study abandoned sicilian soundscape. Vacuamoenia in these years partecipated at FKL Hearing the Pot symposium (Oberhausen DE, 2013), Nuit Blanche 2014 (Paris FR, 2014), SAE Meeting (University of Kent, UK), Klingt Gut Symposium 2016 (Hamburg, DE), Sonorities 2016 (Queen's University, Belfast, UK), The Sound of Memories (Goldsmiths University, London) and the work 23pg12rl12 was selected in the “Sound at Work” release for Temporeale (Firenze, IT).

## Dicotomico

e-cor ensemble

(Altilio Francesco, Maddalena Cristian, and Nardelli Mirjana)

### ***Program Notes***

Dicotomico is an acousmatic piece divided in two parts that are not opposed to each other. Starting from the meaning of the term “dichotomy”, the form is traced and it results in two well-defined phases. Working with few materials for both of the parts has been very important in order to have homogeneity. Moreover, they allowed us to see how much the piece could change, not only when it is manipulated but also when the context changes. Before recording every single sound object, parameters such as the timber, the development, the dynamics and the morphological evolution are taken into account and put into a macroscopic framework. Due to an accumulation of redundant sounds, they result in a body of eccentric objects with their own rhythmic pulsation. This piece is to be listened with the practice of the “reduced listening” (ascolto ridotto), that is the attitude of listening to a sound without thinking about the source sound, whether real or imaginary, but paying attention only to its physical matter. It is about listening to the sound itself without getting sidetracked by the sense it might convey.

### ***Biographies***

e-cor ensemble are a electroacoustic music project founded in the 2013 and constituted by Mirjana Nardelli, Cristian Maddalena e Francesco Altilio. Their production is based on care and esthetics of the sound which, explored and investigated through different artistic forms, becomes the focus of the ensemble, the common element in all their works. The key element is represented by the dialectics interaction and multimedia: only through dialogue can achieve and express the e-cor ensemble investigation. Influenced by the acousmatic art their activity focuses on the applied music, sound design, improvisation and video-art.

# Sound Wrinkle

## Seiichiro Matsumura

### *Program Notes*

The Interactive Sound Installation "Sound Wrinkle" is to make people explore their own voices' textures recorded as FFT (Fast Fourier Transform) data through playful experiences. It has 3 steps to be participated.

1. Recording: Users' voice input to the microphone triggers the recording immediately.
2. Visualizing: The projection indicates FFT visualization of recorded voices which looks like "Wrinkle".
3. Interacting: After finishing the recording, users can control the playback position of audio by the horizontal movement of him/herself in front of the display. It means moving the virtual "tape head".

The user would hear the transition of his/her own vocal sound as granular sound. "Sound Wrinkle" would guide people to discover aesthetic aspects of their own voices using audio and visual media. Not only users but also people passing by can play back the pre-recorded voices. It means that remained signs of past users are revealed unexpectedly.

This is structured with combinations of several computational technologies around audio and visual. I use Max7 (Cycling74) with jit.freenect and cv.jit libraries for processing FFT, visualization and captured motion data by Microsoft Kinect.

### *Biography*

Seiichiro Matsumura is a composer, sound and interaction designer, Associate Professor of Schoolo of Design, Tokyo University of Technology in Japan. He studied at Institute of Sonology course of Royal Conservatory The Hague and finished his Ph. D. at Tokyo University with the research of Sound Installations that audience generates rhythm by concrete sounds. His interactive pieces have been exhibited regularly in Japan, China and Korea as a part of "Magical Museum" exhibitions and exhibited in WRO Media Art Biennale and Audio Art in Poland. Some were awarded honorary mention prizes of Asia Digital Art Grand Prix 2012 and 2013.



