ACM SIGGRAPH IRC
International Resources Committee

INTERNATIONAL PODCASTS

Within the context of the annual SIGGRAPH conferences, the International Resources Committee produces audio podcasts and written transcripts of works shown at the Art Gallery in SIGGRAPH Asia 2013. Presented in different languages, these allow the works to become accessible to our international visitors, as well as anybody who is unable to attend the conferences. Hosted on various sites (including SIGGRAPH.org and iTunes), the files also serve as archival reference for future interest and investigation. We hope you enjoy this description of fabulous technology works.

SIGGRAPHasia**2013**: **Art Gallery: 'Future/Past'**

English

Produced by:
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Kotaro Abe, Yasuaki Kakehi
Keio University

Ambient Camera: Who Released the Shutter?

Ambient Camera: Who released the shutter? is a compilation of short videos made of photographs that were taken with a camera controlled by a Geiger counter. In this work, the camera releases the shutter whenever the Geiger counter detects radiation. Thus, these photographs are taken not by a person's will but by an environmental factor. We have made several short movies by arranging these photographs in particular methods. *Ambient Camera: What released the shutter?* includes three types of movies. The first movie simply shows the photographs at a consistent frame rate, similar to a slideshow. The more frequent radiation is detected, the smoother the movie will be. In the second movie each photograph is shown according to the interval when the radiation was detected. We can sense the amount of radiation as the pictures change in an irregular rate every few seconds. The third movie is an alignment of photographs that were taken during the same appointed time, but in different locations. From this movie we can compare how often radiation is detected among different locations.

Immediately after the Great East Japan Earthquake and Fukushima Daiichi Nuclear accident that occurred on March 11th, 2011, there was an abrupt increase in awareness of radiation around the world. While time has passed since the incidences, people still cope with this "Invisible radiation" in different ways: some try to face it, some try to avoid it and others have simply forgotten about it. This work is a scene of our daily lives that has been recorded by radiation, is an indication of how we deal with radiation and may also be a reminder of radiation itself.

Jae Joon Cho, Won Hyung Lee
Chung-Ang University
Sang Chul Nam
NuEye

Beyond the Gravity

Beyond the Gravity is a work that lays its foundation in ‘Art + Technology Play’ platform, which means the combination of ‘art’ and ‘digital technology.’ The work materialized a new form of art by combining sound art and media art. It employed the technique of projection mapping and using the fundamental principles of light, which expanded the limit of expression in spatial terms. At the same time, the work enables audience who experience the work to imagine unreal conditions such as zero gravity by transforming the existing space into a new visual space and making an illusion as one exists as a being floating in the vast universe. Through the visual effect that is within the augmented virtual space created by projection mapping, audiences of the work go through a confusing experience and are dazzled by such experience. In other word, the illusion experienced within the work seemingly exists by a cognitional misjudgment while it does not exist in reality. Audiences are unable to fix their vision and experience fragmentary perception. Surrounded by light, their senses make mistakes, leading them to recognize the nonexistent phenomenon as reality.

Under such context, *Beyond the Gravity* presents an extended space in a virtual form. The work realizes it by systemic expansion and amplification of light, which is materialized through physical partitions that are used as screens for projection. In the space created by the work, the flickering lights follow a certain rhythm, appearing as if they are traces of stars in the universe or radioactive particles floating in the atmosphere. While they are moving in a very delicate manner, the fine particles interact with sound and represent the dramatic emotion in the work.

Seguru Goto
Bordeaux Art University

Duali

The idea of work is based upon the idea of performance on the context of new media, dance, music, and images, however it doesn't really belong to any style, in fact. The controllers of gestures and other continuations, such as Wifi and programming are originally developed. Utilizing this, the work explores the extension of the potentialities in the relationship of man and machine. This performance specially exploits the interaction between the body of the performers and the video images and the body of the performers, and the image and architectural/lightning-like image on stage, which can transform in real-time, thanks to his BodySuit.

This is based upon the concepts of Dualism. None of them are not intended to show superior or inferior, however the both interacts each other, and at last to bring the new different contexts. For example, with its two dancers (which seem to be the opposite characters), it expresses the interaction between the video representation and the real bodies which is presented on scene.

In European philosophy, this refers to "mind-body" or "mind-matter dualism", e.g. Cartesian Dualism, and the Asian philosophy talks "physical dualism", e.g. the Chinese Yin and Yang. For example, the stage of performance is regarded as space – architecture / time – body. The dancers consist of female – male / man – machine, and like these, the work expresses its ideas that seem to conflict each other, but as a matter of fact, these co-exist. The images consist of only white - black, and augmented body – virtual space, the music are sound – noise /expression – abstract, the choreography is meant for rationality – perception / body – machine. One can extent these abstract "dualistic" ideas into the conjunction of geographic and cultural mixtures between Asia and Europe, as well.

Tatsuro Kudo, Satoshi Kawabata
Kyushu University

DynamicProjection[OCTA]

Dynamic Projection [OCTA] is a projection mapping art work "in which objects move dynamically".
High-precision tracking of projected image changes featureless cube and two panels (made of styrofoam) to the "magic objects" which is intermediate of real and virtual. Moreover, the feature of accurate motion tracking enables a performer not to move according to image but move without inhibition. The system can reflect creativity of the performer and the delightful happening in the spot.

The performance is roughly divided into three scenes and reflected technological expansion until this work is produced.

Scene 1. Projection mapping to static object
It all starts from here.

Scene 2.Dynamic Projection with cube
You will notice that the particles pursue the cube which the performer moves, and trajectory of movement is displayed on the back screen.

Scene 3.Dynamic Projection with cube and panels (real-time physics calculation)
A virtual physical things inside the cube and on the panel surfaces returns a reaction according to "How the performer move objects" on site.

Other scene.Dynamic projection with panels
Panel representation of the second half, has produced the illusion effect by switching the particle movements between being fixed to the panel and fixed to the space.

All of these image expressions are output from 1 fixed projector.

Byungioo Lee
Seoul National University

Egg

Let’s assume that you were a bird just born inside an egg. Are you sure that you could imagine the world outside the egg? No! You may not even recognize the fact that there is a barrier between the world and you. The concept of barrier is not formulated until the subsequent existence of the outside world. Thus, you cannot imagine or postulate the existence of an egg since it does not show you any information about the outside world. The existence is the farthest enclosure of your world. At this point, your existence itself is to impose a constraint on yourself. You have a freed mind. However, your mind always conceives the unreachable world that you are not able to imagine. In this work, a small mirror continuously follows up and blocks your hand creating an invisible wall. At this moment, look at the hand blocked and reflected by the mirror. Ask yourself, which object is blocking you? Is it the wall created by a complex robotic device or just yourself?

Jeong Han Kim, Hong-Gee Kim, Jin Hyun Ahn
Seoul National University
Hyun Jean Lee
Yonsei University
Jung Do Kim
LG Electronics

EMC (Emergent Mind of City) 2 & Qualia Landscapes

The *Emergent Mind of City (EMC)* project has been inspired by Leonardo da Vinci's "City of Water, Design of City as an organism." A city is an evolving creature with a very complex system that comprises men and systems like various organizations. In the EMC project, we look at the contemporary city in a data-flow, instead of water-flow, perspective. In the human body, afferent and efferent neural transmissions among nerves enable various organs to work as one inter-connected organism. If the city is viewed as a human body, the neural transmissions can be likened to the data flow of our time.

However, if we consider the whole of data emerging daily in the city, it is an opaque, tantalizing, floating chaos. The data only assumes meanings as it is arranged and categorized in light of news, issues, and opinions. *EMC* specifically focuses on three flows of "Fringe" data: 'event,' 'feeling,' and 'appearance' data. When perspectives and meanings are projected and focused on an event, 'News-network' emerges; on a feeling, 'Emotion-network'; and on an appearance, 'Image-network'. A news-network that extracts meaningful structures from the meaningless flow of event data represents a flow of words that conceptualizes the city, and reveals the collective intelligence. An emotion-network, consisting of emotion data, is both a flow and a collective emotion that endow an identity to the news. We searched over tweets in Twitter for emotional words related to current news to create a network out of them.

Then, how does the city expose its embodied mind? Through its hybridizing a micro-individual-perspective and macro-social-minds, *EMC* creates the 'Virtual Mind Neuron' of cities (Boston, Dublin, Mumbai, Seoul…) and visualizes real-time mind of cities related to specific issues.

Andreas Zingerle
Linz University of Art and Design

Faceless Patrons

Faceless is an augmented reality installation questioning the trust we put in online representations and computer mediated communications. The artwork showcases fake bank checks and a series of photographs, through which one can access an augmented reality layer. The virtual layer exposes fragments of online traces in form of video and audio. A fraudster‘s identity is often based on either identity theft or a confusing mix of several existing individuals, giving them the opportunity to remain faceless and anonymous. The images in the augmented layer are the result of an online search in an attempt to confirm or invalidate the authenticity of the scammers’ online representations. For this project we created the fictional character, Anna Masquer, representative of an average contemporary artist that only exists as an online identity. Her photo series *Faceless* is a collection of faded and worn down images from abandoned graves – another kind of faceless; past away and forgotten, yet an identity to use and abuse. This collection is presented online and offered to art scammers, who, posing as gallerists or wealthy art buyers show their interest in the artwork. The gathered checks are physical evidence of fraudsters sending overpaid checks, tricking the artist into money laundering and advance fee fraud. Art trade as well as any other online commerce requires trust between the actors. This trust is often built upon virtual representations that allow an international market, yet leaves us vulnerable for abuse. The opportunities to sell products or services online makes us targets for online fraudsters, who use the anonymity of the internet to trick the victim into their story worlds.

Kazushi Mukaiyama
Future University Hakodate
Yujiro Kabutoya
Database Corporation

Ijiros

Ijiros are robot brothers which express emotions reacting a user's actions. They are not able to move itself because they don't have any actuators. They, however, express emotions with face in the display and voices from the speaker like a baby. They have been made base on the concept to make the friendship with users.

Today, we can see many robots in not only industrial factory but also our various daily-life situation. These are getting more quick and correct responses back recently. However robots which support us in daily-life has been required to make a natural relationship with us, because they need to work with us directly such as elderly care situation. To make a natural relationship, it is important for us to be able to recognize robots as artifacts which have mind. Therefore, we tried to realize ”emotional communication” between robots and human beings to think and share their feeling each other beyond simple responses of commands and signals.

As you can see, emotional communication between man and machines is the key of these works. In our case, we refers to ”vitality affect” in infant developmental psychology. Such as a hugged baby communicates his/her mother laughing or irritating, Ijiros also express emotions with faces and voices reacting from strength, kind, frequency, direction of user’s actions.

Thus, Ijiros have been developed to entertain people to keep it like physical pets. We hope you all enjoy touching them.

Michinari Kono, Yusuaki Kakehi
Keio University
Takayuki Hoshi
Nagoya Insitute of Technology

Lapillus Bug

lapillus bug is an atomic creature wandering and hovering over a breakfast plate.
Leftovers are his greatest treats, just waiting for the fantastic moment.
He wonders which piece to choose, with his luxurious taste.
When he get sight of some ripe colored things moving or freshly placed, now his appetite is unbearable, starting to chase the treat.
You may interfere with this table sized world while wondering at this mysterious scene.
A small piece of inorganic material has become alive appealing his potentiality and vitality.
From ancient times, the relationship between material and life has been believed to be very close noticed by philosophy such as hylozoism which argues that everything is alive and have consciousness.
Life is precious and familiar factor for us human being and we have honorable feelings to them.
Nowadays, attempts merging superior structures or functions of living things when we design artificial objects in the fields of robotics, computer graphics and others, have often been accomplished under the modern technology development.
Moreover, now we can visually recognize and represent the hidden and involved spiritual features of materials, thanks to the modern digital technology.
Adopting life elements into materials and extracting life elements from materials, makes the border of material and life more ambiguous.

Ina Conradi Chavez
Nanyang Technological University

Mise-en-Scène: Elysian Fields

For the occasion of exhibit, the animated film Elysian Fields has been orchestrated as an impressive sound and visual experience. Inspired by the sacrifices made by past generations and expanding on an exploration of World War II,- Elysian Fields fuses fantasy and history to transform the past and re-configures it into the present. Developed around the French term Mise-en-scène, which literally means “putting on stage”, this cine-installation will expand spatial and temporal limits of the film narrative into a new and visually impressive experience within the given space.

Daniela De Paulis
CAMRAS

Opticks

OPTICKS is a live radio transmission performance between the Earth and the Moon during which images are sent to the Moon and back as radio signals. The project has been realized by visual artist Daniela de Paulis (IT/NL) in collaboration with Jan van Muijlwijk and the CAMRAS radio amateurs association based at Dwingeloo radio telescope (NL). Each live performance is made possible thanks to the collaboration of radio enthusiasts Howard Ling (UK), Bruce Halász (Brazil) and Daniel Gautschi (CH).
OPTICKS uses a technology called Earth-Moon-Earth or Moon-bounce, developed shortly after WWII by the US Military for espionage purposes. EME uses the Moon as a natural reflector for radio signals. After the deployment of artificial satellites in the late 50s, radio amateurs continued using it as mean of communication. The 'noise' showing in any moon-bounced image is caused by the great distance travelled by the radio signals to the Moon and back (approximately 800.000 kilometers) and by the poor reflective qualities of the Moon's surface. When the radio signals hit the Moon's surface, they are scattered in all directions so that only a small percentage of the original signals is reflected back on Earth.
The title *OPTICKS* is inspired by Newton's discoveries of the light spectrum, reflection and refraction. The colors composing an image - converted into radio signals - are bounced off the Moon (reflected and refracted) by its surface during each live performance of *OPTICKS*.

Alfio Pozzoni, Tommaso Colombo
FABRICA
Jae Joong Lee, Jin Wan Park, Seon Noh, Minji Song
Chung Ang University
Moonjung Go
STUDIO G
Dongseop Lee
Rect Works

Paint Wall

This work represents a mural painting in which many people are taking part. Human beings had done visual representations in a cave or skeletons of an animal before civilization. For instance, the prehistoric Lascaux cave mural in France, which is estimated to be around 22,000 BC, is a prime example; thus, mural painting can be regarded as the oldest form of a painting. Mural painting generates an effect of dividing and contrasting the architectural parts visually, and is also utilized as a decorative element of a wall. This work aims to make sure that many people will be able to participate in a mural painting work as an architectural form as including the interactive and fluidic elements using a smartphone as a tool, which is the product of the modern digital development.

Kamil Nawratil
Volvox Labs

Perception of Consequence

With Perception of Consequence Nawratil places two evolving forms in a reversible entropic system and simulates them to resemble evolving human states and emotions. The system itself evolves from organic form into chaos - an entropic equilibrium, but its cyclical nature pushes the system towards rebirth. Exploiting both your visual, auditory and touch sensory systems, Perception of Consequence will guide you through the experience of transformation and evolution.

Ioannis Michaloudis
Curtin University

Talking with the Rusted Cloud

In the 21st century, the speed of transformation in Southeast Asia is perhaps beyond anything experienced by preceding generations. Because of this prompt change, the air pollution is so big in Asia that a giant brown cloud blocks the sunlight over our planet from India to China. The Asian brown cloud has reduced sunlight by more than 10% in huge swaths over planet Earth. Extreme weather events are costing governments and citizens billions each year. Science, Technology and Art are key words for every Change Of The World. Our Art & Science project focuses on these three key words and on the brown cloud phenomenon. In our drawing below, we propose a translucent cave where a “Cloud Room” and a “Touching The Cloud Screen” are enclosed. . In the cloud room we install a 20cm diameter sky-disc made out of NASA’s nanomaterial silica aerogel. Inside this sky-disc there is a brown cloud. A white LED light projector will orbit around the rotating sky-disc, generating thus a giant golden-hue shadow, scanning it on a semi-circular back projection screen. (shadows visible only from the outside of our installation, cf. simulation cello video and photos attached) On the opposite side of our projected shadows there is a second rear projection where Biennale’s spectators can see someone’s finger trying to touch the brown cloud… Searching where this projection is coming from, (s)he could enter our cave and discover how we can communicate with a cloud.

Hsin Hsin Lin
INFOTECH Research & Consultancy

When Equations Dance- Tango with Lin Hsin Hsin

Deeply rooted in mathematics, technology, art and music, anchor on linux and android, the artist conceives, initiates, establishes paradigm shift concepts, and builds digital artworks from scratch. There is no art, because science is the governor of art. Since 2007, the artist has discarded the resource intensive 3D modeling method, and replaced it by equations -- the ultimate eco-friendly one-step process to build static and/or animated, stereoscopic 2D, 3D, interactive and Web-based digital art. The latest (2013) being: playing and dancing with the zero-gravity 3D objects, structures, and/or membranes created for Android-based smartphones to realize touch-and-go screen performances anytime, anywhere.

Andrea Polli, Eric Geusz, Daniel Maestas, Eric Harrison, Russell Bauer
1 University of New Mexico
Nigel Jamieson
AUT University
Robbert de Goede
Independent artist

Wind over Water: Making Visible the Invisible

Concerned about the complexity of ecological problems - poorly communicated to the public by the mass media – a team of artists aim to present new public space possibilities through mass-participatory augmented reality experiences. *Wind over Water* provides a full and diverse media experience designed to engage the public with environmental ideas and concepts at varying layers.

For SIGGRAPH Asia, *Wind over Water* will allow a large number of participants to simultaneously explore Hong Kong's Victoria Harbor and to interact with a 3D computational simulation and narrative in a responsive, geo-locative, markerless AR visual and sonic experience.

Wind over Water connects participants' perspectives on space, memory and imagination with a mass-participatory augmented reality fantasy. Recognizing the importance of multi-level interdisciplinary collaboration through consultation with local experts, Wind over Water development begins with geographical and historical research and sound-walks leading to the identification of sites and development of geo-locative media.

Wind over Water is an initiative from a small international collective of artists and researchers from 3 continents: Australasia, Europe and North America; and 3 disciplines: architecture, sonics and mobile geo-reality. *Wind over Water* is designed to "explore intersections between nature, science, technology and society as we move into an era of both unprecedented ecological threats and trans-disciplinary possibilities."

In-kyung Choi
GSCT, KAIST

[blow:]

Unlike any other animals, humans believe their lives were given by the creator’s own breath. With this breath, human became the only creature with a spiritual life, fulfilling both emotion and intellect. And such perspective gave me to reestablish the meaning of 'breath' from a biological activity to the concept of the interaction between the human and as a communicating medium. From the *[blow:]*, the audience stays in the real space as the particles separately exists in the virtual space, and the method that merges the two is the breath. People, who received the emotion from the creator, now augment its territory to the virtual space using the breath. This concept also extends to an attempt to interact between from one virtual object to another. Installing rear screens to the transparent glass allows the interaction from one side to another and by minimizing the hardware system, the virtual space and real space is being juxtaposed: a system to improve the users expands their feelings. This work is focused to develop a speaker sensory systems which only will react to the sound of the user's breathe. The sensor detects only the sound of breathe and transforms the analog speaker into a digital switch, sending the coordinates to the circuit. Arduino receives this coordinates and controls the movement of the particles in real time.