



Tokyo University  
of the Arts  
COI Site



Tokyo University of the Arts, Department of Games – Vertical Slice was held on 3-4 November 2018. The Graduate School of Film and New Media is planning to launch a Game Creation program from April 2019, and this joint exhibition with our COI Site was a simulation of what a Graduate Exhibition for this program would look like. Five artworks displayed in the Arts and Science LAB, were each directed by a graduate student of the School of Film and New Media. In producing these games, a creator from Luminous Productions offered advice to each as a mentor, and engineers also joined the teams when necessary.

The game “Monster Augurs” by Yosuke Tani is set in a digital space of an iPad and a garden of diorama. As the game progresses, the hologram monsters reflected in the garden grows. In the feedback session, a commentator said, “it is the first time I have seen a game that combines an iPad and diorama but that is very interesting”. In “The Insiders” by Koki Sone, the worlds seen through two interfaces are connected to become one artwork. One is a Virtual Reality (VR) world, in which cars and other objects fall from above the players’ heads. The other is Augmented Reality (AR) world, in which the players throw feed at goldfish. In the two worlds, only the objects that fall and the position of the feed being thrown is shared, and the players cannot see what the other one is doing. It is as if the game is mimicking real life where sometimes your actions can unknowingly impact others.

Through “Japan-US Educational Initiative on Creating Games as a Comprehensive Artistic Practice”, TUA’s Graduate School of Film and New Media has been selected in the “Inter-University Exchange Project (Re-Inventing Japan Project)” run by the Ministry of Education, Culture, Sports, Science and Technology, for the next five years since 2018. We collaborate with the University of Southern California (USC), which is one of the leading universities in North America in the field of game design education. During the preview ahead of this exhibition, we were joined by Professor Andreas Kratky and four graduate students from USC and had an active feedback session. Since the Graduate School of Film and New Media was launched 13 years ago, it has become one of the top universities, demonstrated by the fact that a few of its works have been nominated for the Short Films Competition at the Cannes International Film Festival. What chemical reactions will this collaboration of the two universities bring about? This exhibition was an ambitious event, giving a glimpse into the Game Creation program from the next academic year.

Synesensory Media

Tokyo University of the Arts,  
Department of Games  
– Vertical Slice

# RYOUIRE

## Vol.14

Arts & Science LAB. COI news

Date of Issue : 8 March, 2019  
Editor : Kei Arai, Riwaiko Hosaka, Kyoko Shimotake, Hiroko Matsuzaki  
Design : Hiroko Kuboki  
Printed by OKAMURA PRINTING INDUSTRIES CO.,LTD.  
Publisher : Tokyo University of the Arts Center of Innovation(COI)  
Address : Tokyo University of the Arts, 128 Ueno Park, Taihoku, Tokyo JAPAN  
Tel : 090-5525-2464 Fax : 03-6698-6406  
Email : coi-info@ml.geidai.ac.jp web : <http://innovation.geidai.ac.jp/en/>





Vivaldi's 'The Four Seasons' live animation concert

## Visual Euphony: Animation & Music in LA, TUA × USC

"Vivaldi's 'The Four Seasons' live animation concert" took place at the Aratani theatre on 13 January 2019. It was performed by five students from the Department of Instrumental Music at Tokyo University of the Arts (TUA), and five students from the Thornton School of Music at the University of Southern California (USC). From TUA, Ririko Takagi performed the violin solo "Summer"; Yukino Nakamura played "Autumn"; Yui Imagawa played the viola; Yuno Ambo played the violoncello; Tomoya Takamoto played the contrabass; and President of TUA, Kazuki Sawa was the Concertmaster throughout. In addition, each season was accompanied by animated films created by four animators.

TUA and USC are planning to collaborate even further including in the field of music, in addition to animation and games, on which we are already working together as part of the Inter-University Exchange Project. This performance was organized by TUA, USC and "Japan House Los Angeles", an overseas hub of the Japanese Ministry of Foreign Affairs to showcase and communicate Japan, as co-hosts. On 15 January, there was "An Evening of Animation: Student Works from Japan and the US" and a performance of "Autumn" taken from "The Four Seasons" also at the Japan House.

For the first time globally, this concert used an AI-based "score-following" technology, jointly developed by the Research on synesthetic media group and Yamaha Corporation. In this system, the AI (Artificial Intelligence) detects which part is being played by listening to the sound and based on that, it continually synchronizes the film to the music as it is being played live. Until now, the system has been tested at real events such as the JST Fair, and it is expected to be used mainly for classical concerts, but also to deepen the connection between music and animation.

## "Why games at the Tokyo University of the Arts?"

Professor Takashi Kiriya, Head of Graduate School of Film and New Media and Research Leader at our COI Site, says "games are a combination of scripting, directing, art and music; a comprehensive art of the modern age using computers". Furthermore, a defining feature of an interactive game, where the players actively control the game, has the potential to drastically change the relationship between the artist and the viewer in art. In recent years, the environment for creating games has developed and it has become easy even for individuals to create sophisticated games. For that reason, there are many students with an interest in games as a way of expressing themselves. Games born out of art, an area that TUA has built expertise over the years, will drastically change the very concept of a game and is expected to demonstrate itself as a new form of art.

## Exhibition at Science Agora 2018

"Science Agora 2018" was held at Odaiba, Tokyo between 9 - 11 November 2018. Organized by JST, it is an event that connects science and society through workshops and symposium, and exhibition booths belonging to companies and research organizations. It sees a wide range of visitors from researchers to young children.

The Research on culture sharing group from our COI Site exhibited a booth titled "Goldfish man - experience the nature of ukiyo-e". It was an attempt for the visitors to experience the humorous world of personified fish portrayed in the works such as "Hyaku-monogatari" (Hundred Tales) and "Sarai-tonbi" (Thieving Hawk's Sudden Attack) by a famous ukiyo-e painter of the Bakumatsu period, Kuniyoshi Utagawa (1798-1861). The visitors had the experience of being a goldfish portrayed in "Hyaku-monogatari" through a VR content. In the painting, the goldfish are surprised by a cat looking into the fishbowl so the visitors wearing a VR goggle would see a cat with its tongue out when they looked up and they would see their fellow goldfish in panic when they face sideways. In addition, we also had on display a Clone Cultural Property - a reproduction of Utagawa's ukiyo-e painting using TUA's patented technology.

Some visited our booth because of their interest in Utagawa's humorous and cute goldfish. It was an opportunity to experience and enjoy ukiyo-e, as well as to know more about VR and the scientific technology behind Clone Cultural Property.



Visitors wearing a VR goggle to experience of the world of Ukiyo-e

## Conservation for the Arts; Thinking on Techne

The exhibition "Conservation for the Arts; Thinking on Techne" was held at TUA's University Art Museum on 2 - 18 October 2018.

Based on the exhibition's theme to conserve the collection of self-portraits and graduate artworks produced by students that TUA has collected over the years, about 90 pieces, ranging from hanging scroll to wood carving, video, television and digital media, were displayed.

Among them were the Clone Cultural Property (reproductions of the mural paintings of the Main Hall of Horyuji temple and the work depicting the descent of Amida triad) and 3D mold of the Horyuji Shaka triad statues, produced by the Research on culture sharing group. They were treated in the same manner as an ectype, reproduction and preservation of cultural property, and for the first time their position within this research area was clarified.

Through the display of professional-use optical disk, quartz glass, biomedica and DNA as the next-generation memory media, the visitors were made to consider again the potential and weaknesses of digital data.

The issues around conservation of art is expanding into other areas of expression as it integrates itself with music, film and physical expression, and this exhibition looked at this from a modern viewpoint through medium such as Clone Cultural Property which are a new form of art reproduction and recreation of an existing work. As the exhibition refers to examples of conservation of cultural works, it also became an attempt to be a starting point for a new cycle to connect, and pass on new heritage to the future.

## The culmination! The third project "listen to opera with your body"

"Listen to opera with your body" (strategic promotion of the creation of art and culture, supported by the Agency for Cultural Affairs Government of Japan) was organized by the Research on disabilities and expressions group of our COI site, at Yokohama Minato Mirai Hall on 26 December 2018. For the third project in the series, 22 elementary school children with hearing impairments participated, who were chosen from the general public in advance, and over 50 people in the audience.

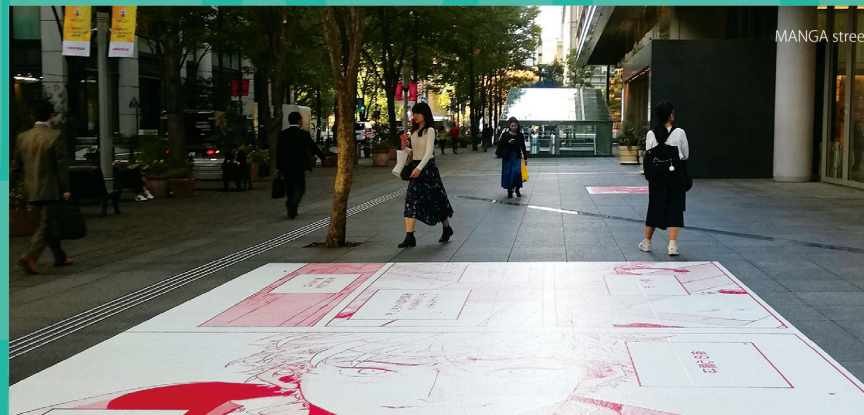
It started with the workshop "what is opera?" where the voice and vocal range of an opera singer were explained on a panel, followed by a solo performance of soprano, tenor and bass singers. The snake and the bird, both characters from the story of "Siegfried", which was the main study material, were expressed by the dancers' pantomime, and then also through a picture-story accompanied by sign language. In the group session, the children had to think of words and instruments that could be associated with the three characters, Siegfried, the bird and the snake. They had a proactive discussion, and each shared an image. For the first time, we added a new experiment to smell a perfume (by Ogawa & Co., Ltd.) which was made specifically with the characters in mind. The children used their imagination to create a realistic image in their minds, and I heard them say "this smells good. Is it the bird?" and some children were frowning saying "it smells strange" or "it smells like sweat". For the part where children were writing the lyrics to the opera, they could do so in a relaxed atmosphere as the



singers, the dancers and the musicians had taken on the support role for the children.

Then, the opera was performed alongside a VR film on a hemispherical screen, Sphere 5.2 (WONDER VISION). The forest and creatures which appeared in the animation film were made of clay, during the second event in the series, by high school students of the Yokohama Municipal School for the Deaf. The font of the subtitles (Morisawa Inc.) were selected for each character and onomatopoeia, and the speaker "HUG" (JVC KENWOOD Corporation) that transmits sound and vibration was used. The children were immersed in the world of opera through this scientific approach and by what they learnt in the workshop. After the performance, the whole venue was full of laughter, with many saying, "I had fun!" and everyone was emotional and inspired.

"Listen to opera with your body" is a project aimed to support those with hearing impairments, but this project showed that it is possible to have a borderless opera workshop where the whole audience, with or without a disability, could share experience and inspiration.



## "GEIDAI ARTS 2018 in Marunouchi"

Mitsubishi Estate Co., Ltd. and Tokyo University of the Arts (TUA) organized the "GEIDAI ARTS 2018 in Marunouchi" from 22 - 31 October in the Marunouchi area. This year, which is the 12th year of organizing the event, the COI Site and Cultural Diplomacy and Art Business Group from TUA helped to plan and manage it, as co-organizers. The theme was "BORN!", and there were many programs such as concerts, talk sessions, and interactive art events that created a sense of presence for the visitors as we wanted them to familiarize themselves with art, in addition to our aim of supporting young artists.

As part of the "MANGA street" exhibition, which attracted the attention of many visitors, the most famous scenes from the manga "blue period" by Tsubasa Yamaguchi, a graduate of TUA, were printed on a large sheet and placed in the middle of a pedestrian street. Only when visitors stepped on the sheets of manga, they could hear the characters speaking the lines of those famous scenes, which was designed using a super-directional acoustic system.

We also organized two seminars at the venue. For the third BO-GAKU meeting, Masanori Yoshino, Project Leader of "Innovative Food & Healthcare Master" at the COI Site of Hokkaido University, and Yoko Chiba, Kyoto University COI "Support for Women and Child-caring" member, were invited to speak from a different viewpoint to TUA. For the fourth meeting of "ai culture interactive Lab.", the theme was "Is data science possible in art?". Yukino Oishi, Project researcher in the Research on culture sharing group at our COI Site was a speaker. She presented data from the production of the 3D model of the "Tower of Babel" and explained how it is different from the image a human eye can see. She also revealed interesting anecdotes from when it was being created.

The number of visitors to each program increased from last year, and it was an opportunity for people of all ages and professions to find out more about our COI Site's activities and the connection between art and scientific technology.

## Launch of "Kinzoku sonzai" (existence of metal)

There is a unique challenge starting at our COI Site. The project name is "kinzoku sonzai". A term coined by Takenobu Chikaraishi, Project Lecturer, it is a creative and expressive project that began with his own interest in producing a new set of values by integrating science and art. We interviewed Takenobu Chikaraishi, roboticist; Kensaku Aihara and Marie Sakagami, metal designers; Natsumi Fukazawa, dancer and Ryooya Usuha, filmmaker and game developer, who are all members of the group. Nowadays, as demonstrated by their titles, science and art is compartmentalized by expertise. But they believe that science and art have a fundamental desire to understand its own "sonzai" (existence), and their project termed "kinzoku sonzai" is referring to the inherent concept that does not separate these fields. The name of the project "kinzoku sonzai" is taken from the material "kinzoku" (metal) common to both Chikaraishi (roboticist), who came up with the idea, and Aihara (metal designer).

When they first started, they did not know much about each other's work and research, despite belonging to the same COI Site within the Tokyo university of the Arts. Through conversations about their work and interests that they both had, their understanding and curiosity for the different fields of expertise apparently grew deeper. Furthermore, they are aiming for an innovative network which makes new creations in chain reactions, where each one proactively present information or passively receive stimulation, and continuously connecting and widening, just like neurons firing. The group's first artwork which is currently underway will be a film to be released in February 2019.



The members of "kinzoku sonzai"

## COLUMN About the Research on culture sharing group



Sub Project Leader, COI Site Professor of Sculpture Tokyo University of the Arts

## Takashi Fukai

I first became involved in COI when Professor Miyasako asked me to supervise the production of the mold for the head of an actress (doll) to be used for an android-human theater. Following that, I was also asked to oversee the production of a sculpture of "The Fife Player" by Manet and a statue of Zeus, as well as the 3D data for the Shaka triad statues in the Horyuji temple. Initially, there was no place for the lab, so we were using the second floor of the University Hall, which will be renovated shortly, and Kuroda Memorial Hall. That is around the time that I became a member of the COI.

Creating the bronze Shaka triad statues and the wooden carvings of the pedestal, which took many hours of work, was an unforgettable experience. And working on the 57th cave of Mogao Caves in Dunhuang, later shown at the "SOSin-DENSin" exhibition, was very interesting. Whilst the work in Goguryeo, Horyuji temple and the mural painting of Bamiyan was going on, I also thought that Mogao was an important piece of work. This is a personal story but when I was studying in London over 30 years ago, I used to look around the British Museum, the National Gallery and the Tate Gallery (currently known as Tate) almost every day. When I returned, I felt the urge, as a Japanese person, to see Asian art with my own eyes and joined a tour of China. I visited the Mogao Caves in Dunhuang, and it must have been a cave for the tourists, I vividly remember how low the quality of the restored Buddha was, and that memory has stayed with me. As we set about our production of the Clone Cultural Property, we visited Dunhuang again and they kindly showed us many of the important caves. I was amazed to see that the 45th and 275th caves still had the original statue. The decision was made to recreate the 57th cave, but because there had been so many restorations made on the Buddha statue compared to the quality of the mural painting, I did not feel comfortable recreating it in the same way. So, I suggested to use the Tang dynasty style as an inspiration when recreating it. I still had the memory from 30 years ago. After some discussion, we decided to go ahead in that direction. We started making the model in Dunhuang and sent the data to Tokyo where the mold was cut, adjusted and colored in the lab and the project was realized in this unique way. I feel that many life events are connected in this world.

Clone Cultural Property will continue to connect with cultural heritage and the world, to make contributions across many areas. The tireless efforts of the researchers and inspiration as artists will be ever more important.



"FUKAI TAKASHI Seven Stories" at the University Art Museum, TUA (2018)





General Manager, Human Resources & General Administration,  
Strategy & Administration,  
Corporate Strategy Bureau  
NHK Enterprises, Inc.

## Akemi Sugayama

She has planned and produced many television shows including education and information programs, anime cartoons, as well as drama series. She has also managed projects using mega film and audiovisual materials other than for television. The "Projection Mapping [GEKITEKI]" project that she joined as a producer won the 2013 Good Design Award. In particular to note is her involvement for the seventh year in Projection Mapping "Haruka", an event in Fukushima to encourage reconstruction of Fukushima and Tohoku since its launch. She currently belongs to Corporate Strategy Bureau and is working on human resource development.

### — Given your rich experience, what are you currently working on?

Since I moved to the Corporate Strategy Bureau from Global Business Headquarters, I have been working on human resources and it is an interesting job. Until now, the standard way of working was to complete a task given to you by the company that you work for. But the era of stability has come to an end and we are entering a new era of insecurity. As we start to hear the word singularity more often, it is entirely possible that in two or five years, the world will be completely different. I thought that we must seriously consider questions like "how should we be?" and "what can we do?". It is necessary for one person to have expertise in several fields and be active in multiple areas. For that, I would like to find and nurture talent that this company has in many of our employees, and I want them to think outside the box in order to make this company flexible from the inside.

### — Even after you were put in charge of human resources, I see that you are creating new challenges. When you were involved in projection mapping in the Global Business Headquarters, that must have been a new challenge in Japan at that time.

Initially the culture of audio-visual material started with film, and then television was invented which families watched together, and nowadays smartphones and tablets have become the mainstream. These are something to be enjoyed alone, and the contents have changed drastically to adapt to that. However, even if people are enjoying the contents by themselves, I believe that the feeling to want to share their comments on SNS or with friends has not changed. In the case of "mega film" such as projection mapping, a huge crowd can simultaneously share the experience and excitement. It wraps the audience in film and sound and they can have an immersive experience. This kind of excitement and synergy which can only be felt in a real-time experience is a necessity for human beings and I do not think it will ever disappear.

### — Projection Mapping "Haruka" in Fukushima, which you have been involved in since the beginning is now in its seventh year.

Projection Mapping "Haruka" in Fukushima was set up to bring about a positive economic effect to encourage reconstruction of Fukushima and Tohoku, and for the local people to see it as an annual event to mark the season. I have always been conscious of what feelings I would like the visitors to have when they watch the show. For that, I carefully consider factors like the type of audience, time of the event and the weather to create the program, and I also think about the visitors flow from entering to exiting the venue. After each show, I analyze the audience's reactions and make multiple changes on the spot to ensure that the audience have a great time. From a technical viewpoint,

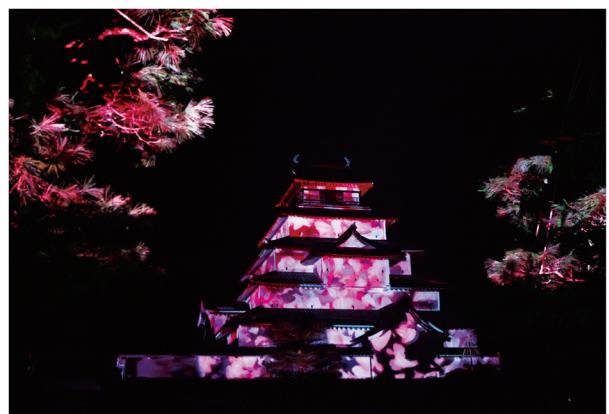
audio-visual and sound equipment are constantly evolving, and the content becomes lighter, clearer and more expressive. I think it gets better each year. The staff all wave to our audience as they leave the show afterwards, and it is most encouraging for us to receive feedback like "it was great!" and "we will come back again!", and only by joining the event, can we feel this way.

### — How can we create projects that will be accepted and embedded in society, just like Projection Mapping "Haruka" in Fukushima?

The preparation period for projection mapping to become known in Japan was just under a year, which is a very short period of time. It was already becoming popular overseas and above all, it helped that it was showcased at a spectacular event to mark the completion of the Tokyo station building being restored. From there, this cultural experience rapidly became popular and embedded in society as an event to encourage reconstruction in Fukushima and Tohoku. When trying to spread a new culture, I believe it is important to fix your goal by seeing the supply-demand balance and delivering it to where it is most needed. You just need one seed to sow in many different places such as academic conferences, schools and entertainment industry for it to radiate in all directions. Against that background, it is then most effective for innovators and facilitators who look to the future to innovate individual projects or technology.

### — I think you have taken on such a role, but is there any principle that transcends any field?

In fact, everywhere I go, I do the same. It is "innovation". I am always alert to questions in society "who needs a new thing?" or "who needs a booster"? In any field, it is difficult to create one out of zero but in my current leadership role in human resources, I aim to nurture people and companies that can live a fun and happy life by being flexible in this tumultuous era.



Fukushima Projection Mapping "Haruka" 2013  
©Fukushima Sakura Project / NHK Enterprises