

ARS ELECTRONICA
campus 2008

Hybrid Ego

The University of Tokyo

Thu. 4 September - Tue. 9 September 2008 10:00-19:00
Kunstuniversität University of Art and Industrial Design Linz, Hauptplatz 8, 4010 Linz, Austria



Ars Electronica Campus 2008 Hybrid Ego - The University of Tokyo

Thu. 4 September - Tue. 9 September 2008

10:00-19:00 Gallery Talk : Sat. 6 Sep 17:00-

venue : kunstuniversität

University of Art and Industrial Design Linz, Hauptplatz 8, 4010 Linz, Austria

<http://www.aec.at/en/festival2008/>

<http://www.cyber.t.u-tokyo.ac.jp/ArsCampus/>



campus | Tokyo Exhibition 4-9 Sep @ kunstuniversität

Artworks by students of The University of Tokyo

campus | Tokyo Workshop 4-9 Sep @ Salon, kunstuniversität

"Keitai Trail! : Mobile Video Workshop by "Media Exprimó"

campus | Tokyo Conference 6 Sep 10:00-16:30 @ Theater, kunstuniversität

"Crossing the boundary between Art and Technology"

Postgraduate research presentations from The University of Tokyo
& Interface Cultures, University of Art and Industrial Design Linz & Zurich University of the Arts.

campus | Tokyo Talk 8 Sep 13:00-17:00 @ Brucknerhaus

"Presentation of The University of Tokyo"

Animation Next - presented by CG-ARTS @ Theater, kunstuniversität



Ground floor

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- 8 Optical Camouflage
- 9 Bionic Engine
- 10 Haptics of Robotic Polysemy
- 11 Tablescape Plus

First floor

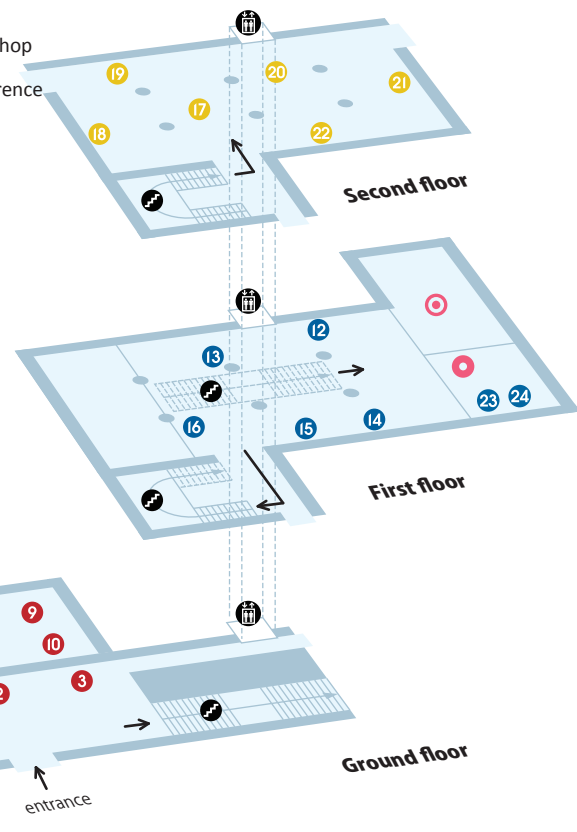
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Brucknerhaus →

- campus | Talk



- ELEVATOR
- STAIRS

Exhibition Information

Ars Electronica Campus 2008: Hybrid Ego - The University of Tokyo

Date : Thu. 4 September - Tue. 9 September 2008

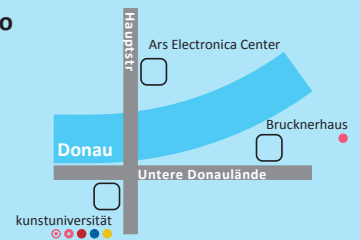
Time : 10:00 - 19:00

Venue : kunstuniversität
(University of Art and Industrial Design Linz)

Address : Hauptplats 8, 4010 Linz, Austria

Organizer : The University of Tokyo, Ars Electronica Campus 2008 Exective Committee

URL : <http://www.cyber.t.u-tokyo.ac.jp/ArsCampus/>



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THE MACHINE INDUSTRY MEMORIAL FOUNDATION (TEPIA) / CG-ARTS / Japan Media Arts Festival Executive Committee / The EU-Japan Fest Japan Committee / Content Science Education Program / IAMAS / NTT InterCommunication Center[ICC] / KDDI R&D Laboratories Inc.

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Michitaka Hirose, Chuichi Arakawa, Katsushi Ikeuchi, Masayuki Inaba, Susumu Tachi, Takeo Igarashi, Takeshi Naemura, Shin Mizukoshi, Tomoe Moriyama, Naoki Kawakami, Yasuaki Kakehi, Tomoaki Yoshikai, Alvaro Cassinelli, Shunsuke Kudoh, Taro Suzuki, Yasuhiro Suzuki, Hideaki Nii, Kunihiro Nishimura, Junji Watanabe, Rica Okabe / Hiroshi Harashima, Syunya Yoshimi / Keiko Kobayashi(IAMAS), Nobuya Suzuki(IAMAS), Hiroshi Kanechiku

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ARS ELECTRONICA Campus 2008

Campus 2008 The University of Tokyo

Message from the President

The University of Tokyo in Japan commemorated its glorious history as we celebrated the 130th anniversary in 2007. During these 130 years, we have acquired a tremendous amount of knowledge. It is not easy to make full use of this knowledge. It is necessary to integrate the knowledge that has been fractionalized into numerous specialized fields into one unit, associate pieces of knowledge with each other, and apply the significance of such cutting-edge studies to society; namely, the structuring of knowledge is required. Undoubtedly, the perspectives of international exchange and artistic activity, in addition to studies in laboratories and schools, can be effectively used to carry out the structuring of knowledge.

As the university president, I often use the words, the courage to lead (stand ahead). I hope our students will take the initiative in all aspects of our society and make use of their imagination while looking to the future. I have heard that this is the first time for a university to hold its campus exhibition in ARS Electronica. Young faculty members and students of The University of Tokyo, with the courage to lead, are presenting their research achievements at the exhibition, in which the technology and the arts are integrated. I would be pleased if viewers took the time to appreciate each display of their work.

Hiroshi Korniyama
President, The University of Tokyo

Hybrid Ego, towards a new horizon of Hybrid Art

The University of Tokyo was established in 1877 as the first national university in Japan. CAMPUS2008 exhibition and its related events introduce various leading edge projects by students, researchers and professors mainly from those 3 courses (Graduate School of Interdisciplinary Information Studies/Graduate School of Information Science and Technology /Graduate School of Engineering). This is the excellent result of a research project that realizes technology that foresees the possible future closely related to the high/sub-culture. Other research areas and studies like robotics, mixed reality/augmented reality, ubiquitous media, interface and sensing by UT focus on art methods to show their projects results. We would like to invite all visitors to CAMPUS2008 to view the future possibilities, rich resources of expression and studies of the Hybrid Ego /Self towards the new Hybrid Art field.

Tomoe Moriyama
Curator/Project Associate Professor, Graduate School of Interdisciplinary Information Studies, The University of Tokyo



1 ephemeral melody
Risa Suzuki, Taro Suzuki, Seiichi Ariga, Makoto Iida, and Chuichi Arakawa

"ephemeral melody" is a novel musical instrument using soap bubbles. We can listen to unrepeatable music at the time bubble burst through this instrument. When you turn a handle of this instrument, bubbles come out of a box instead of the sounds. Then bubbles become sounds when they hit copper pipes. We can listen to the "once-in-a-lifetime music." It aims to play music that depends on the environment around this instrument rather than electronic devices.



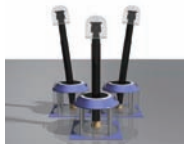
2 Kotaro
- A Multiple-DOF Variable-Flexible-Spine Musculoskeletal Humanoid
Yoshinao Sodeyama, Naoya Muramatsu, Tomoaki Yoshikai, Ikuo Mizuuchi, Masayuki Inaba, with Inaba Lab.

Humanoid robots are still in a process of the evolution. A next-generation humanoid named "Kotaro" is the most advanced and complex one. It is designed in an anatomically-based approach. It has a spine, scapulas, collarbones and ball-and-socket joints like a human skeleton. The anatomic-based body is driven by the over a 100 motors. You can meet the future robotics.



3 TORSO - the teleexistence system
Kouichi Watanabe, Hideaki Nii, Naoki Kawakami and Susumu Tachi

TORSO acquires natural visual information and accurately tracks the user's head motion. Earlier, conventional devices were only able to express the three-axis rotation of the neck, but TORSO goes beyond that capability to also express the neck's translational motion. The device is positioned at a distance from and facing toward the user, who wears an HMD or HMP and experiences the image transmitted by TORSO: a view of the user as seen by a second person.



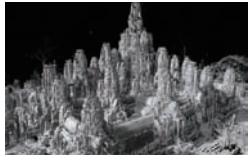
4 Virtual Asukakyo
Tetsuya Kakuta, Rei Kawakami, Takeshi Oishi and Katsushi Ikeuchi

Virtual Asukakyo intends to restore Japanese ancient capital of Asuka-Kyo to its original state by using Mixed Reality technology. We reconstruct the lost buildings of Asuka-Kyo with CG and synthesize them with the real landscape of Asuka village. The technical feature of this project is the real-time shadowing. The soft shadows of virtual objects are generated by using a set of pre-rendered basis images and shadowing planes.



5 Virtual Bayon
Sonoko Okura, Yasuhide Okamoto, Takeshi Oishi and Katsushi Ikeuchi

The Bayon temple is a richly decorated stone architecture, located at the center of Angkor Thom in Cambodia. We started the Bayon Digital Archival Project in 2003 to preserve this world-heritage historical site in fine detail. "Virtual Bayon" is a system to display the Bayon's entire 3D model that we have obtained, with a simple, intuitive user interface. You can change your view direction by moving the display freely, and see the Bayon's outstanding value to humanity.



6 Log-Log 2008
Hideaki Takata, Junghyun Kim, Sho Amano, Eriko Shiraya, Makoto Iida and Takeshi Naemura

Log-Log is a balance-beam shaped interface that makes use of shifts in the user's center of gravity as the input, and an interlocked interactive video system. Spread under the balance-beam is a video image of water that ripples in response to the movement of the person on the beam. Strain sensor are attached on the beam to measure flexure of the wood. By this research, it is possible to turn various things into interfaces by simply attaching sensors to them.



7 inter-glow
Takuji Narumi, Atsushi Hiyama, Tomohiro Tanikawa and Michitaka Hirose

"inter-glow" is a system that facilitates close interaction and communication among users by using multiplexed visible-light communication technology. When users shine lamps on a table in a miniature living room, the system recognizes which lamps are illuminated and produces family conversations.



8 Optical Camouflage
Takumi Yoshida, Hideaki Nii, Naoki Kawakami and Susumu Tachi

Optical camouflage technology makes anything wearing a special cloth seem to be transparent. The cloth is made with a retro-reflective material that reflects light precisely according to the angle of incidence. When an image is projected to the material, viewers at a specific location perceive a realistic merger of the projected image with the background. This technology is applied to the field of art in collaboration with Junji Watanabe(NTT/JST) and Nathan Cohen (Artist, U.K.).



9 Bionic Engine
Ryuma Niiyama

Because of today's highly sophisticated technology, humanoid robots and bio-inspired machines have emerged as our partners, helpers, and alter egos. As is a soft engine powered by clean compressed air. The engine is driven by pneumatic artificial muscles and has a heart beat. The motorcycle displayed here is the prototype of expected future products. A machine equipped with a Bionic Engine can be thought of as the mirror image of a future human equipped with an artificial organ.



10 Haptics of Robotic Polysemy
Marika Hayashi, Asuka Kadowaki, Ryohei Ueda, Tomoaki Yoshikai and Masayuki Inaba with Inaba Lab.

This work consists of a tactile humanoid and furniture that move in conjunction. You can operate the humanoid by touching the furniture and vice versa. Tools are designed to be touched and manipulated by humans, and as they evolve into machines and further to robots, their relationship between humans enhances the polysemy of behavior, i.e., "to operate" and "to be operated." How many robots, or subjects of behavior can you find in this work?



11 Tablescape Plus
Yasuaki Takehi, Takeshi Naemura and Mitsuhiro Matsushita

"Tablescape Plus" is an interactive tabletop video theater. Different images are projected onto the respective tiny screens placed on the table. As the user moves the screens, the images change. Moreover, users can develop new stories by changing the arrangement of the screens. For example, when the screens are placed side-by-side, the images on the respective screens react to one another. Users can be involved in the world of these tiny imageries, which is like a living miniature garden.



12 Robot Dancer
Shinichiro Nakaoka, Shunsuke Kudoh and Katsushi Ikeuchi

This robot dances based on a paradigm, Learning From Observation (LFO), in which a robot observes human actions, recognizes what the human is doing, and maps the recognized actions to robot actions for the purpose of mimicking them. The dance motion is not preprogrammed by a human, but the robot automatically finds a key point in a dance and represents it.



13 Plushie
Yuki Mori and Takeo Igarashi

Plushie is an interactive system that allows nonprofessional users to design their own original plush toys. We use a sketching interface for 3D modeling and also provide various editing operations tailored for plush toy design. The model on the screen is always a good approximation of the final sewn result, which makes the design process much more efficient. We successfully demonstrated that non-professional users could design plush toys or balloon easily using Plushie.



14 boxedEgo
Alvaro Cassinelli and Masatoshi Ishikawa

boxedEgo is a double trap for the Self: a stereoscopic peep-show box waiting in a corner of the exhibition space first captures the curiosity of the observer - and then the observer himself. The box appears empty; however, if the observer talks, the box detects the human prey and traps it in its interior, effectively transforming a subject into its own object of observation. This work is a preliminary exploration on the cognitive (and possible practical) aspects of artificial autoscropy.



15 Haptic Radar
Alvaro Cassinelli, Carson Reynolds, Alexis Zerroug and Masatoshi Ishikawa

The Haptic Radar is a wearable device composed of an array of "optical hair modules" that sense obstacle range and generate vibro-tactile cues on the user's skin. An analogy in the animal world would be the insect antennae or the cat whiskers. Among the targeted applications are visual prosthetics for the blind, augmentation of spatial awareness in hazardous environments, as well as enhanced awareness for car drivers (in this case the sensors may cover the surface of the car).



16 GravityGrabber
Kouta Minamizawa, Hideaki Nii, Naoki Kawakami and Susumu Tachi

GravityGrabber provides a new form of ubiquitous haptic interaction that delivers weight sensations of virtual objects. A vertical force and a shearing force on the user's fingertip are reproduced by a pair of motors that roll up a belt. With these devices on your index finger and thumb, you can perceive interactive grip, gravity, and inertial forces of virtual objects during various behaviors such as shaking and rotational motion.



17 feelings of daily details
Tokihiko Fukao, Noguchi BME Lab.

When you touch and stroke this concrete table, sound is generated and varies according to your stroke. Examining our daily life keenly, we recognize that rich details are already hidden in it. But usually, rather consciously or unconsciously, aren't we deadening our sense and denying the contact with actual sensation of reality? By the experience of stroking the concrete, I present a metaphor for such contact and prompt people updating their view of daily lives.



18 ambie scape
Tomohiro Akagawa

"ambie scape" is an ambient visual work projected to wall facade. The input is people's action which unwittingly performed, and it induce a reaction on projected images. This works try to reconsider the meanings of interactive and Reactive on relationships between people and images. It's not just prepared environment, but it can be reactable sight as a style of ambient interaction. People can face the sight consciously, but also defy close attention. That's what I want to represent - "a discreet ambient interaction."



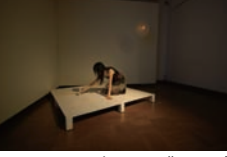
19 structured creature
Yosuke Ushigome, Yasuhiro Suzuki, Kunihiro Nishimura, Tomohiro Tanikawa and Michitaka Hirose

"structured creature" is a small prototype of a moving space structure that can interact with humans. This flexible structure wriggles slowly, rising and collapsing repetitively. This movement is derived from its own structure, called "tensegrity." "structured creature" transforms by changing the equilibrium state between tension and compression with artificial muscles. This work gives a strong presage of the future where physical space completely corresponds to the subjective space that people perceive.



20 wavers
Takashi Suzuki, Kunihiro Nishimura, Yasuhiro Suzuki, Tomohiro Tanikawa and Michitaka Hirose

In general, human beings transmit and receive information by sound, while insects and animals often use vibration instead. We guess is, by transmitting information by vibration, we will be able to recognize the feeling that is usually hidden below unconsciousness. This piece "wavers" allows you to feel a new type of "information" by translating the interaction between the interface and objects into vibration. Please step on the board and sense a difference of various textures. Feel the sensation yourself.



21 Sticky Light
Alvaro Cassinelli, Takahiko Ishikawa, Yusaku Kuribara, Stephane Perrin and Masatoshi Ishikawa

A laser spot bounces on a figure being drawn on paper, trying to escape the labyrinth of lines. There is no camera nor projector; this is an experience where the audience can touch and interact with a beam of pure light - and even play a pong game with bare hands. The piece is based upon a novel 3d tracking mechanism using a laser diode, a pair of steering mirrors, and a single non-imaging photodetector.



22 Kaze no Chi
Eriko Shiraya, Seiichi Ariga, Taro Suzuki and Chuichi Arakawa

The streamline on the wall changes as the movement of yourself. Not only changes, but it expresses how wind drifts around yourself. Please see, use the whole body, and feel "the flow of the wind" that we can't see in the real world.



23 A Method for 3D Scene Reconstruction from Ukiyo-e
Yuka Kubo, Jie Zhao, Koichi Hirota

This method is for generating "Ukiyo-e composition" from perspective images such as a photograph. Although Western method of perspective drawing reached Japan in 1739, many works of Ukiyo-e, Japanese traditional woodblock print, were painted using the original composition and not the perspective method. For development this method, we quantitatively identify the features of Ukiyo-e of an architectural scene.



24 DPS (Digital Peep Show)
Taizo Matsumura / Tomoe Moriyama

It is a demonstration of interactive DPS software and its workshop documents by Tomoe Moriyama, cooperated and originally developed by Taizo Matsumura. "Peep Show box" is originally known as a kind of perspective illusion device from pre-cinema history.



Workshop, Conference, Presentation and Related events

- campus | Tokyo Workshop**
Keitai Trail! :Mobile Video Workshop by "media exprimo"
4 (Thu.) - 9 (Tue.) Sep. 10:00-18:00 @1F Salon
YAJIKITA TIME in the Room 13:30-14:30
Jun Abe, Masako Miyata, Kosuke Numa, Tatsuo Sugimoto, Yuri Tanaka and Kiyoko Toriumi.
In this workshop, we will collect "keitai" (mobile phone in Japanese) video clips from participants, and make collaborative slide shows on screens. There will be "keitai video shooting" team wearing Japanese traditional travel clothes asking for people to be video-shooted. Please be prepared for our workshop!



- campus | Tokyo Conference**
"Crossing the boundary between Art and Technology"
Postgraduate research presentations from The University of Tokyo & Interface Cultures, University of Art and Industrial Design Linz & Zurich University of the Arts.
6 (Sat) Sep. 10:00-16:30 @1F Theater

[Time Table]

Opening	10:00-11:00
	10:00-10:20 Christa Sommerer & Laurent Mignonnea / Professor of University of Art and Industrial Design Linz
	10:20-10:40 Gerhard M. Buurman / Professor of Zurich University of the Arts
	10:40-11:00 Michitaka Hirose / Professor of The University of Tokyo
First Session	11:00-12:30 Presentation by Students *
Lunch Break	12:30-13:30
Second Session	13:30-14:30 Presentation by Students *
Coffee Break	14:30-15:00
Third Session	15:00-16:00 Presentation by Students *
Closing	16:10-16:30 Takeshi Naemura / Associate Professor of The University of Tokyo Tomoe Moriyama / Project Associate Professor of The University of Tokyo / Curator, Museum of Contemporary Art Tokyo

* Students of The University of Tokyo, University of Art and Industrial Design Linz & Zurich University of the Arts

- Gallery Talk 6 (Sat) Sep. 17:00-17:30** Great opportunity to meet all professors and projects.

- campus | Tokyo Presentation**
"Presentation of the University of Tokyo"
8 (Mon) Sep. 13:00-17:00 @Brucknerhaus
Tomoe Moriyama, Arakawa Lab., Ikeuchi Lab, Ishikawa-Komuro Lab., Inaba Lab., Tachi Lab., Hrashima-Naemura Lab., Hirose-Tanikawa Lab., media exprimo

- Ars Electronica campus 2008 Animation Next**
in collaboration with CG-ARTS/cooperation with Japan Media Arts Festival Executive Committee
4(Thu.) - 9(Tue.) Sep. 10:00-18:00 @1F Theater

Straying Little Red Riding Hood
pecoraped (NISHIO Miyako, SUGIDONO Ikuo)
Grand Prize, Animation Division,
The 13th Computer Graphics Contest for Students

