

Yamaguchi Center for Arts and Media [YCAM] Exhibition

LabACT vol.1 We connect to the world through our eyes- Eye-Tracking study
“The EyeWriter”

October 1 (Sat) - December 25 (Sun), 2011 10:00-20:00

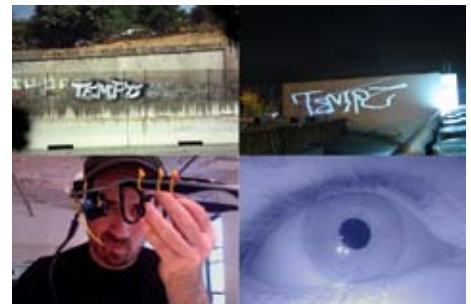
Yamaguchi Center for Arts and Media [YCAM] Foyer / Admission free

Drawing with the eyes.

YCAM launches an exhibition project showcasing and practically applying *The EyeWriter*, a device for drawing by using just the eyes

The Yamaguchi Center for Arts and Media [YCAM] announces “LabACT”: a series of exhibitions introducing creative work inspired by a dialogue between science and art, in a broad context including social aspects, and with a special focus on the technical aspects of media art. This year’s program includes two exhibitions themed around eye-tracking technology. The first one presents *The EyeWriter*, a device for drawing by the line of sight that has been developed in the USA.

Along with a general overview of *The EyeWriter* project, and an explanation of the technical development, the exhibition features a hands-on booth for visitors to try the latest version of the device for painting pictures with their eyes. A workshop and display of new installation work based on the latest technology complete the program of this multidisciplinary exhibition demonstrating the media-informed developments in technology, thought, and artistic expression, using examples of *The EyeWriter*’s practical application.



© Tempt1, Evan Roth, Chris Sugrue, Zach Lieberman, Theo Watson and James Powderly

Exhibited works:

“The EyeWriter”

Created by: Zach Lieberman, Evan Roth, James Powderly, Theo Watson, Chris Sugrue, Tempt1

exonemo “EyeWalker”

Semitra “eyeFont”

INQUIRY

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YCAM New Exhibition Series "LabACT"

Showcasing the creative powers of art in pursuit of technology, and art enabled by technology.

"LabACT" is a new exhibition series at the Yamaguchi Center for Arts and Media [YCAM] focusing on the technical aspects of media art, launched with the goal of introducing creative work inspired by a dialogue between art and science.

Technical explorations in media art based on informatics and media technology help shape social and public nature with regard to next-generation communication. Developed and amassed, they pave the way for new forms of artistic expression. This project is designed to explore by practical research and development further possibilities in media art based on the philosophy of sharing technology, and social aspects such as welfare, while benefiting from the YCAM staff's experience gathered while producing and exhibiting a large number of works in collaboration with artists.

LabACT vol.1

"The EyeWriter"

October 1 - December 25, 2011



LabACT vol.2

"Eye-Tracking Informatics"

December 4 - March 25, 2012



Seiko Mikami "Molecular Informatics Version 3.0"
(1998, Maison des Arts de CRETEIL & Le Manège
Maubeuge)

The keyword for 2011 is "eye tracking technology"

Showcasing the creative powers of art in pursuit of technology, and art enabled by technology.

Themed around "eye tracking technology" based on sensing programs that detect changes in the line of sight caused by movements of the pupils, the program for 2011 - divided into two parts - introduces projects by media artists and other socially active creators, as well as artworks involving visual communication. Both parts are characterized by collaborative work reflecting the methods and ideas of engineers, with YCAM's own "InterLab" research and development team being involved in development and updating.

The first installment of "LabACT" is dedicated to

The EyeWriter, a project launched with the aim of developing a device for drawing using the eyes. The exhibition outlines the project at large, and introduces two specific works that are at once applications of open-source software. In volume two of the series, Seiko Mikami unveils her new work *Eye-Tracking Informatics*, an installation piece exploring the concept of "observing the act of observation." In this upgraded version of Mikami's previous work *Molecular Informatics* (1996), two participants engage in an almost "haptic" dialogue via imagery visualizing their respective lines of vision in a shared virtual space. By technically updating one of the world's most prominent works of media art, the installation aims to explore the expanse of artistic expression facilitated by technology.

Creative diversity and social meaning carved by technology, examined through *The EyeWriter's* operation

The EyeWriter project, launched in 2010, was inspired by an American graffiti artist's desire to be able to "draw again" after his body was paralyzed due to Amyotrophic Lateral Sclerosis (ALS). A group of participants centered around a core of artists and engineers from all parts of the world developed a mechanism for drawing with the eyes using open-source software and available devices, the function of which they are continually revising. The exhibition showcases the achievements made in this project that is heavily influenced by new technologies and the philosophy of sharing technology and information, and offers visitors the opportunity to try the newest version, *The EyeWriter 2.0*. Furthermore, the exhibition includes new interactive installations by two artists, realized using eye-tracking software that is available as open-source software.

***The EyeWriter*: a device for drawing with the eyes**

Eye tracking technology (a system recognizing a human's gaze by identifying the position of his/her pupils) is frequently used in computer input devices. In order to implement this technology at low cost in a system that enables the user to draw with their eyes, the inventors of *The EyeWriter* developed special eye-tracking and eye-drawing software. As a result of repeated improvement from the prototype (version 1.0) which was based on a spectacle type device, the latest version (2.0) no longer requires the user to wear a device instead using advanced calibration technology. The project further inspired the formation of social networks, broadening the scope of research into its potency not only as a tool for expression by drawing, but also in the fields of medicine and welfare. Anyone can build and use *The EyeWriter* by utilizing a combination of computers and other familiar instruments, and installing software that is available for free. It is probably the most versatile device for drawing with the eyes.

Exhibit 1

"The EyeWriter"

Documentation

Next to panel displays and documentary/explanatory footage of *The EyeWriter* project, the exhibition includes a hands-on booth in which visitors can try *The EyeWriter 2.0*. After an initial calibration of the gaze tracking function, visitors can enjoy various features, such as writing graffiti or playing games with just their eyes. Through such displays facilitating the experience and understanding of *The EyeWriter*, the exhibition outlines the project at large, its social significance, and its continual development thanks to the sharing of technologies.



[Top] Tempt1 writing with *The EyeWriter*

[Center] Graffiti projected onto the wall of a building

[Bottom] Graphic drawing created with *The EyeWriter*

© Tempt1, Evan Roth, Chris Sugrue, Zach Lieberman, Theo Watson and James Powderly

Artist Profile

***The EyeWriter* development team**

Team around a core of six original members that have been working as artists, designers and programmers. Next to media artists and developers of the C++ programming language-based "openFrameworks", Zach Lieberman, Theo Watson and Chris Sugrue, the group comprises Free Art and Technology (FAT) and Graffiti Research Lab members Evan Roth and James Powderly. Each of these members belongs at once to a media art-specialized institution, such as the Ars Electronica Future Lab (Linz) and Eyebeam (New York). The sixth member, graffiti artist Tempt1, also works as a magazine publisher and activist, and recently resumed his graffiti writing activities thanks to *The EyeWriter*.

<http://www.eyewriter.org/>

New artistic expression emerging from *The EyeWriter*'s application: Unveiling a new interactive version.

The exhibition includes two brand new installations based on eye-tracking software as developed by *The EyeWriter*. These new interactive works connecting eye-tracking technology with the abundant inventiveness of the members of *exonemo* and *Semitra*, will be opportunities to experience new creative possibilities opened up by a combination of art, science, and technology sharing.

Exhibit 2

exonemo "EyeWalker"

new work (commissioned by YCAM) | installation

This work allows visitors to experience jumps of vision according to a changing line of sight. Monitors ("objects") fitted with video cameras are installed at various locations and in different angles inside the YCAM building, transmitting images of the facility's interior to a monitor in the user (visitor) booth. When the user spots and focuses on one of these "objects" on the monitor screen, the image instantly switches to live footage from the respective object, which again includes other objects that can be "selected" .

Here *The EyeWriter*'s software is used for identifying the object the user looks at on the monitor, and triggering a system selecting sources of live video transmission. Submerged in the images on the monitor in the user booth, the visitor's sense of vision wanders from one object to another, according to the focal point of his/her gaze. The work that stretches our sensation of being absorbed in visual information to the extreme, and creates the optical illusion of jumping from one real space to another. It disturbs relationship between the act of watching and the watching of the individual's own existence.

Exhibit 3

Semitra "eyeFont"

new work (commissioned by YCAM) | installation

In this work, a new interactive installation version of *Semitra*'s "tFont/fTime" exhibition (2009) revolving around typeface design, visitors' eye movements are utilized for the creation of typefaces. Visitors look at letters appearing on a monitor, and overwrite these with their own line of sight. The letters drawn this way are stored in a database, where they are archived for the duration of the exhibition. The act of drawing lines through eye movements is a novel kind of experience that combines inconvenience and a sensation of lacking proficiency and refinement. Although made under the control of consciousness, these letters are products of parts of the human body that cannot be controlled completely. The work and the myriad variations of letters created and accumulated in it showcases possible typeface designs made with the line of sight, whereas it will be particularly interesting to see to what extent basic proportions remain intact, and what gets distorted for the sake of new individual designs.

"eyeFont" Archive Website: <http://eyefont.semitra.com/>

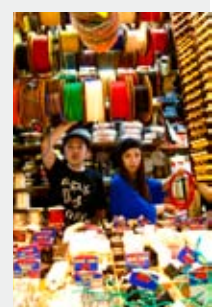
exonemo

Artists

Pair of artists that have been challenging a "media hacking" style of creative work, equipped with a mixture of anger, humor, and a text editor. Kensuke Sembo and Yae Akaiwa started producing Internet-based works in 1996, and expanded their range of activity to the realms of installation, software, performance, device and event production in 2000. While flexibly traversing digital and analogue, network-based and real world, they have been illustrating the relationship between technology and its users in experimental projects informed by the artists' highly humorous approach and unique viewpoints. Their work *The Road Movie* was awarded a Golden Nica in the Net Vision category at Ars Electronica in 2006, and in 2010, their *Antibot T-shirt* received a Tokyo TDC RGB Award. Next to a full-scale exhibition in 2006, YCAM has been introducing many of *exonemo*'s works at various occasions.

<http://exonemo.com/>

photo: Nonoko Kameyama



Semitra

Artists

A group of artists that emerged from the Semi-transparent Design collective (Ryoji Tanaka, Toshiyuki Sugai, Yusuke Shibata, Hiroshi Sato, Shunya Hagiwara and Emiko Kashiwagi), *Semitra*



developed an original design technique by interconnecting digital networks and real spaces. They received numerous advertising awards at the Cannes Lions International Advertising Festival, The Clio Awards, One Show, New York ADC, D&AD, and others.

The artists combine visual, programming and networking technology to create imaginative works ranging from web-based art to installation, photography, imagery and other media/formats. In recent years they have been introducing their self-developed "tFont" typeface with an added element of time in installations and workshops. In 2010, the group simultaneously unveiled four new installation pieces in the "tFont/fTime" exhibition at YCAM.

<http://www.semitransparentdesign.com/>

Related events

Symposium

"The EyeWriter - Perspectives beyond development and sharing"

October 1 (Sat) 15:30-18:00 Admission free Venue: Studio A

Panelists: Zach Lieberman, exonemo, Ryoji Tanaka (Semitra),
Hideyuki Ando (Associate professor at Osaka University)
Moderator: Kazunao Abe (YCAM), Takayuki Ito (YCAM InterLab)
*interpretation available

Next to presentations of the exhibited works by their respective creators, the program will include a discussion in which experts exchange views on creativity facilitated by technology, sharing culture and the new artistic possibilities it introduces, and other topics related to social aspects and future prospects brought along by the fusion of science and art.

YCAM Original Workshop "Eye2Eye"

October 1 (Sat), November 6 (Sun), December 4 (Sun) 13:00-15:00

*Full tour on each day; number of participants limited to 20 per tour (reservation required)
Venue: Studio A Lecturer: YCAM Education staff
Target group: 4rd grade students and older Fee: 500yen

※ English-speaking participants are welcome to the workshop.
e-mail workshop11@ycam.jp for more information.

This workshop focuses on the practical application of *The EyeWriter's* eye-tracking software. By way of simple games including visualizing one's own perspective, or sharing the trajectory of one's gaze with others, participants can experience various forms of communication generated through "vision" - a subject that draws increasing attention in the realms of marketing, psychology and economics.

YCAM Gallery tour [18 times during the event period]

Through the tours, participants will discover together with YCAM educational staff, most attractive features of the exhibition.

October 8 (Sat), 9 (Sun), 10 (Mon), 15 (Sat), 16 (Sun), 22 (Sat), 23 (Sun), 29 (Sat), 30 (Sun)

November 3 (Thu), 5 (Sat), 6 (Sun), 12 (Sat), 19 (Sat), 26 (Sat),

December 10 (Sat), 17 (Sat), 18 (Sun)

14:00-15:00 Admission free

* Application: Please visit YCAM 1F Ticket Information prior to each tour

* English-speaking participants are welcome to the Gallery Tour.

Event data

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LabACT vol.1

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"The EyeWriter"

Exhibited works:

"The EyeWriter"

Created by: Zach Lieberman, Evan Roth, James Powderly, Theo Watson, Chris Sugrue, Ttempt1

exonemo "EyeWalker" (commissioned by YCAM)

Semitra "eyeFont" (commissioned by YCAM)

October 1 (Sat) - December 25 (Sun), 2011 10:00-20:00

[Hands-on time: 11:00-17:00]

Venue: Yamaguchi Center for Arts and Media [YCAM] Foyer Admission free

Panelist profile

Zach Lieberman

Media artist/Programmer

Has been operating worldwide in projects including performances, installations and online works that investigate gestural input, augmentation of the body, and kinetic response. Is also known for developing openFrameworks, a framework based on the C++ programming language. His work in the fields of exhibition and education uses technology in a playful and enigmatic way to explore the nature of communication, and the delicate boundary between the visible and the invisible. Has so far received several awards at such festivals as Ars Electronica and CYNETart.

<http://thesystemis.com/>

Hideyuki Ando

Researcher

Associate professor at Osaka University, The Graduate School of Information Science and Technology. Doctor of Information Science and Technology. Specializes in bioinformatics engineering, and researches into virtual reality and nonverbal interfaces based on sensory illusion. Together with Masahiko Sato he participated in the "The Definition of Self" exhibition (21_21 Design Sight, Tokyo), and actively creates works of art related to his specialized area. He was awarded an Excellence Prize in the art division at the Japan Media Arts Festival 2008, and received Honorary Mentions at Ars Electronica (Linz), Interactive Art Category, in 2009 and 2011.

<http://www-hiel.ist.osaka-u.ac.jp/~hide/>

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Curator: Kazunao Abe (YCAM)

Technical director: Takayuki Ito (YCAM InterLab)