

iCLA Music/Brain Symposium 2017: Event Schedule

Friday, 27 October 2017, 09:15-11:45

**iCLA, Yamanashi Gakuin University, Kofu, Japan
Music Studio (MS)**

**<http://www.icla.ygu.ac.jp/en/>
www.musicla.info**

09:15: Organiser's Welcome (Dr. Alexander Sigman, Associate Prof. of Music, iCLA)

09:20: Dr. Hiroko Terasawa (Faculty of Library, Information, and Media Science, University of Tsukuba): “Why is it so pleasant to play music with friends? The physiological and social elements of music emotion” (**presentation**)

Music emotion does not only rely on the sonic and structural elements of music, but also on our bodily functions and social relations. The physiological and social aspects of music emotion will be reviewed in this presentation, in order to investigate the captivating moments in musical experience of everyday life. After reviewing the prior research and noteworthy examples, we propose a model for the embodied communication of musical emotions, and reconsider the values of experience-based music (e.g., improvised, participatory, and interactive music) from that perspective.

09:50: Dr. Haruka Hirayama (Faculty of Arts, Tamagawa University) & Dr. Masao Yokoyama (Faculty of Information Science, Meisei University): “An approach to creating a theatre piece, applying brainwaves: an example of bio-art performance” (**presentation**)

This presentation proposes a method to interpret the data of human brainwaves (EEG) into images and musical notes in order to represent mental states by multimedia performance. This presentation also describes an example of theatrical output that explores relations between some elements that are expected to influence the levels of stress, concentration, or relaxed feelings and actual performer's brainwaves reactions—the arousal levels of brain—proposing an example of bio-art performance.

During the performance, the data of brainwaves is translated into eight types of images according to frequency ranges, as well as musical notes, and the strongest signal every 0.5 seconds is defined as the primary image and as a note for an instrument, using Processing and the Bach library for Max/MSP. In the piece, two actor(s)/actress(es), one of whom wears a brain sensing headband, play out scenarios in an extemporised way.

This work has been performed repeatedly, but the latest performance at the 2017 International Computer Music Conference (ICMC) in Shanghai resulted in the discovery of very interesting phenomena, involving real-time feedback from the audience. Although the technology utilised in this work may have been primitive, the outcomes of this performance could suggest the possibility of a new type of multimedia bio-art theatre piece.

10:30-10:45: Refreshment Break

10:45-11:30: Sam Sernavski (Sound and Music Computing, University of Aalborg):
“The role of music in horror-survival video games: subjective and physiological responses to *Amnesia: The Dark Descent*” (**presentation and interactive demo**)

In this study, musical scores and Foley were added to the soundtrack of a horror–survival video game *Amnesia* in an attempt to intensify the stressfulness and to enhance the immersion into the environment.

The subjects viewed four versions of the video game: (a) video with no music (Control test); (b) video with music; (c) video with music and Foley; and lastly (d) video with music and Foley which had an acoustical treatment to simulate the game environment. To monitor one of the physiological impacts of the experience, electrodermal responses were recorded continuously while the subjects were playing. Subjective responses were collected in the form of a questionnaire before and after the test. The results indicated that music in the horror-survival game can enhance the player experience by engendering a sufficient fear emotion and/or prediction of the upcoming events in the game, which also led to heightened engagement with the game environment. The experiment shed some light on the complex relation between game sound design and visual aspects of a horror-survival video game.

11:30-11:45: Discussion and Closing Remarks

Participant Bios:

Haruka Hirayama is a composer and performer, who comes from Niigata. She studied composition and computer music at Kunitachi College of Music, and she completed her undergraduate and Master's degrees there. Recently she was also awarded a Ph.D in Music (Electroacoustic Composition) from Manchester University, and is a researcher at Tokyo Denki University.

She mainly composes interactive computer music, focusing on instruments and live electronics, and her works have been awarded the Residence Prize at the 32nd International Competition of Electroacoustic Music and Sonic Art (IMEB/Bourges, France) in 2005, and the Pauline Oliveros Prize at the Search for New Music by Women Composers Competition (IAWM/US) in 2012. Many works have been performed at international festivals as well as conferences worldwide.

As a researcher, she has been developing interactive systems for music production, exploring alternative methods for creating interactive pieces as well as performing manners of interactive works. She has recently committed to collaboration projects such as: Brainwaves and Music, led by Prof. Yokoyama of Meisei University, and Synesthesia Virtual Reality: Rez Synesthesia Suite, led by the project team of Keio Media Design.

Hiroko Terasawa received B.E. and M.E. degrees in Electrical Engineering from the University of Electro-Communications, Japan, and M.A. and Ph.D. degrees in Music from Center for Computer Research in Music and Acoustics (CCRMA), Stanford University, USA. She is the recipient of numerous awards, including John M. Eargle Memorial Award from AES Educational Foundation, Super Creator Award from ITPA Mitoh Program, and Best Speaker Award in 2014 Japan-America Frontiers of Engineering Symposium. Her research interests include timbre perception modeling, timbre-based data sonification,

and musical emotion in everyday life experience. She currently works as an assistant professor at University of Tsukuba.

For more information: <http://slis.tsukuba.ac.jp/~terasawa.hiroko.ka/>

Masao Yokoyama started violin when he was 4 years old, and also started cello when he was 10 years old. He completed a Master's degree in Information Science at Waseda University in 1997. After working as an instructor of cello at the Popular Music school of YAMAHA Co., he started arrangement and composition of chamber music in his own concerts and live performances. In 2009, he received a doctorate in Engineering at Toyo University, and has been an Associate Professor at Meisei University (Faculty of Information Science, Tokyo) since 2012. He has also been engaging with the study of composition with electronic and acoustic materials, and studied composition under Prof. T. Hisatome.