# ISASE2016

The 2nd International Symposium on Affective Science and Engineering

# March 21 (Mon.) - 22 (Tue.), 2016 Kogakuin University, Tokyo, Japan

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# Welcome to ISASE2016



Hisao Shiizuka, Chair of ISASE

Affective engineering (or Kansei engineering) is a field of study that aims to contribute to society through the discovery and utilization of Kansei (affective) value. Kansei refers to the impression made by stimulus from the outside world. It is subjective and difficult to explain in a logical manner. Affective engineering is a science that strives to find methods for achieving Kansei value by focusing on the sense of suitability with human feeling that is difficult to explain solely in logical terms. Human intelligence is composed of two aspects: the emotional and sensory aspect, and the objective, precise, and quantitative thinking aspect. Long ago, these two aspects began to develop and specialize independently of one another, with the former typically expressing itself in the arts, fashion, and other fields based on Kansei, and the latter in science and engineering.

The combined field of affective science and affective engineering may be seen as emerging from the two separate developments, with the aim of uniting them. To maximize the utility of affective engineering research, we must look beyond mere quantitative research. What is important is the extent to which qualitative research, which takes into consideration aspects of quality that cannot be grasped in merely quantitative terms, is incorporated into the overall research. When human beings receive stimulus (information) from the outside world and process it in the brain, two mental processes are thought to take place; one overt and one covert. The former process corresponds to cognitive information processing and the latter to affective information processing. It is thought that the interaction of these two processing methods leads to the making of final decisions in human beings. If we consider the analogy of an iceberg floating in the ocean, cognitive information processing corresponds to the tip and affective information processing to the rest of the iceberg, which is hidden under the ocean surface (though, in this case, it will be the focus of countless future research topics). In this respect, there is great value in and need for affective engineering, and it will become a far more prominent field in coming years.

In light of the foregoing, the International Society of Affective Science and Engineering (ISASE) had been established in the last year as an international organization devoted to introducing the new academic field of affective science and engineering to the world. Our hope is that ISASE will become a hub for researchers worldwide and for the promotion of affective research.

The ISASE is intended to contribute to society by focusing on a number of areas related to human sensibilities that exist in between science and engineering.

I hope that this conference will be a forum for valuable information exchange for everyone.

# Keynote 1

# 13:00-13:35, Monday, 21st March Room A0712 Floor 7

# "Measuring Odor-Evoked Emotion for Personal Care Product Design"



Pei-Luen Patrick Rau (Department of Industrial Engineering, Tsinghua University)

**Abstract:** Odors readily become associated to emotions and can thereby influence behavior. Perfume becomes essential in consumer choice as personal-care products have become more similar and differentiation has become a challenge on emotional characteristics. This talk will give an overview of measurements for odor-evoked emotion including verbal conscious measures, non-verbal conscious measures, implicit reaction measures, and physiological reaction measures. The a serious of studies for how to combine measures, how to investigate and identify cultural effects, and how to derive results for the design of personal care products will be introduced. The effects of self-report rating, EMG, and skin conductance are mostly useful and facial expression is not effective as expected.

**Profile:** Pei-Luen Patrick Rau is a professor in the department of Industrial Engineering at Tsinghua University in Beijing. Since 2002, he has founded and directs HCI and Usability research center at Tsinghua University, and also directs Institute of Human Factors and Ergonomics at Tsinghua University. He was an adjunct professor at Yonsei University in Korea, a visiting scholar at Microsoft Research Asia in China, visiting professor at the RWTH Aachen University in Germany, and a visiting professor at the Chuo University in Japan. His research themes include cross-cultural design, technology acceptance, and design for elderly. Prof. Rau has published several articles on these topics in the HCI and related journals and conferences.

# Keynote 2

# 13:35-14:00, Monday, 21st March Room A0712 Floor 7

# "KANSEI: The Implications from Economic Experiments on Music and Decision-making"



### Kan Takeuchi

(Graduation School of Economics, Hitotsubashi University)

**Abstract:** Music is one of the universal languages among humans, and it often influences on mood and emotion. In Takeuchi lab's recent study, they examine the effect of music on decision-making under risk and ambiguity. To detect the effect, the participants are exposed to different types of music (peaceful or sad) for different groups while they are answering the questionnaire with monetary rewards.

They find, for example, that participants listening to sad music are more risk-neutral than the other groups. This result implies that the sad emotion enhances the systematic processing strategy and leads individuals calculating the expected return with a risk-neutral formula rather than just making the choice intuitively.

Then, Takeuchi interprets the concept of Kansei in the framework of economics. First, notice that the economics, including behavioral economics, is grounded on Revealed Preference Theory. It claims that the preference of a consumer is (should be) inferred by what the consumer actually buys under a given situation, not by what s/he says about her/himself. Then, we say, the preference is revealed by her/his choice.

Revealed Preference Theory used to be behaviorism in its original spirit. That behaviorism, however, works the other way around and starts over-emphasizing the consistency among the choices, so that economic theories and models can be meaningful under the consistency. It seems that the internal and interim processes of decision-makings have become unnecessary and inconvenient subjects in economics.

Kansei will be the key factor to reconsider the behaviorism in economics and provide better understandings towards anomalies that have been reported in behavioral economics and experimental economics for the last decades.

**Profile:** Professor Takeuchi is an associate professor of economics at Hitotsubashi University. He received his BA in Economics from Hitotsubashi University and PhD from the University of Michigan. After his PhD, he worked as a postdoctoral scholar at California Institute of Technology (Caltech) and then joined Hitotsubashi University in 2008. His research focuses on experimental economics, intertemporal choice and auction mechanism. His experiments also apply eye-tracking technology to investigate the internal process of decision-makings and, in the most recent experiment, he uses beetles as subjects to test Nash equilibrium concept. Professor Takeuchi has served as the associate editor for Economic Inquiry and for Japanese Economic Review, and Committee Member of Preliminary Bar Examination for Ministry of Justice. He was a Senior Scientific Research Specialist for Ministry of Education in 2014/2015.

# Program Monday, 21<sup>st</sup> March

12:50 – 13:00 Opening ----- (Room A0712)

13:00 - 13:35 Keynote-1 ----- (Room A0712)

Measuring Odor-Evoked Emotion for Personal Care Product Design

Pei-Luen Patrick Rau (Department of Industrial Engineering, Tsinghua University)

13:35 – 14:00 Keynote-2 ----- (Room A0712)

KANSEI: The Implications from Economic Experiments on Music and Decision-making

Kan Takeuchi (Graduation School of Economics, Hitotsubashi University)

14:10 - 15:50 Oral Presentation Sessions

A1: Affective Engineering I ----- (Room A0712) 14:10 – 15:50, 21<sup>st</sup> March

A1-1: A Fundamental Investigation of Cross-modal Effects of Music and Scent on Relaxation Feelings

Makoto Fukumoto and Yuuma Ohno (Fukuoka Institute of Technology)

A1-2: Effect of Classical Background Music on the Arithmetic Calculation Task: Psychological and Physiological Evaluations

> Masashi Murakami (Chuo University), Takashi Sakamoto (AIST), Toshikazu Kato (Chuo University)

Study of Classic Music Effect for Calculation Task

Masashi Murakami and Toshikazu Kato (Chuo University)

A1-3: Research into the Relationship between Floor Materials and Living Spaces as Revealed by Impression Evaluations

Akinori Akiyama (Daiken Corporation),

Yuko Araki and Satoshi Hosoya (Shinshu University)

A1-4: Evaluation of Impression for LED Illumination Applying to the Installation into the Object on the Sidewalk

Effects of Colors and Timing in LED Illumination

Masato Sakurai, Kazuki Hamamoto, Takahiko Kaji, Mika Kato, Noriaki Ikenaga and Keigo Takasugi

(Kanazawa Institute of Technology)

### A1-5: Multi-objective Optimization for Outdoor Advertisements Focusing on Impression, Attention, and Memory

Yasuaki Hiranuma, Ryuichiro Doizaki, Kaya Shimotai, Hiroyuki Sato (The University of Electro-Communications), Mikio Iwamoto, Daiki Okano, Susumu Toriyabe (TVC Ltd.) and Maki Sakamoto (The University of Electro-Communications)

### A1-6: Fusion of Inference and Design- A New Direction should be Toward Practical Design in Era of Kansei/Affective 3.0-

Hisao Shiizuka (SKEL, Shiizuka Kansei Engineering Laboratory) Masahiro Kiyosumi (Kyushu University)

B1: Kawaii ----- (Room A0715) 14:10 – 15:50, 21<sup>st</sup> March

### B1-1: The Study of Kawaii Feeling by Using Eye Tracking

Tipporn Laohakangvalvit, Ikumi Iida (Shibaura Institute of Technology), Saromporn Charoenpit (Thai-Nichi Institute of Technology) and Michiko Ohkura (Shibaura Institute of Technology)

### **B1-2: Emotions Evoked by Traditional Chinese Herbs for Cosmeceuticals** Nan Qie, Pei-Luen Patrick Rau and Jiamin Deng (Tsinghua University)

B1-3: A preliminary survey to investigate the effects of colors in pictogram instructions for global manufacturing settings

Suopor Hiranchiracheep (Shibaura Institute of Technology, Nakhon Ratchasima Rajabhat University) and Atsuko K. Yamazaki (Shibaura Institute of Technology)

# B1-4: Developing an International Design Workshop Methodology - Based on a design workshop between a Japanese and a Turkish University

Yasuko Takayama and Edward Sarich (Shizuoka University of Art and Culture)

**B1-5: Evaluation of levels of kawaii ribbons between Japanese and Saudi Arabians** Enayyah Mohammed Barnawi and Michiko Ohkura (Shibaura Institute of Technology)

### 16:10 - 18:10 Oral Presentation Sessions

### A2: Affective Engineering II ----- (Room A0712) 16:10 – 18:10, 21<sup>st</sup> March

# A2-1: Collecting Data of SNS User Behavior to Detect Symptoms of Excessive Usage Design of Data Collection Application

Ploypailin Intapong (Shibaura Institute of Technology), Tiranee Achalakul (King Mongkut's University of Technology) and Michiko Ohkura (Shibaura Institute of Technology)

### A2-2: Obtaining Potential Appropriate Respondents to Questions at Q&A Sites with the Consideration of Categories of Answer Statements

Yuya Yokoyama (Japan Society for the Promotion of Science), Teruhisa Hochin and Hiroki Nomiya (Kyoto Institute of Technology)

### A2-3: An Image Impression Estimation System Based on Semantic Similarity

Nguyen Thi Thu An and Masafumi Hagiwara (Keio University)

### A2-4: Development and Evaluation of Texting while Walking Prevention System

To Improve the Accuracy of Walking Determination by Acceleration Sensor Jue Zhang, Riku Ogawara and Takumi Moriya (Kogakuin University)

#### A2-5: Development and Evaluation of Texting while Walking Prevention System

Gaze Detection Using the Facial Angle Distinction of Face Authentication Technology and Eye Detection

Kento Sasao, Kazuki Ogi, Jue Zhang and Noboru Sugamura (Kogakuin University) B2: Affective Design ------ (Room A0715) 16:10 - 18:10, 21<sup>st</sup> March

**B2-1:** Differences in Ratings of Different The Japanese Calligraphic Kanji Characters and The Japanese Font

Shioko Mukai, Haruo Hibino and Shinichi Koyama (Chiba University)

**B2-2: Images and Anatomy of Latin Typefaces** Qianru Qiu, Shu Watanabe and Kengo Omura (Fuji Xerox Co., Ltd)

B2-3: Design Impression Adjustment by Extraction and Replacement of Attractive Colors Muneyuki Unehara (Nagaoka University of Technology), Satoru Murata (NEC Solution Innovator Co. Ltd.), Koichi Yamada and Izumi Suzuki (Nagaoka University of Technology)

**B2-4: Visual pressure in space between two apposed plane figures** For convex and concave figures based on English letters

> Oguri Sugawara, Takeshi Kinoshita and Yumie Fukuda (Yamaguchi University)

B2-5: Information Demands of Bus Transfer System based on Human Wayfinding Behavior at Hakata Station in Fukuoka City

Zilong Li and Yoshitsugu Morita (Kyushu University)



We invite you to the world of fantasy from the great view of the Shinjuku Center Building 53th floors, at the restaurant DINING OUT.53.

18:30 – 20:30 Banquet ----- (On the sky that you can enjoy Shinjuku's night view)

# International Society of Affective Science and Engineering

# Program Tuesday, 22<sup>nd</sup> March

9:00 - 10:20 Oral Presentation Sessions

A3: Interface ----- (Room A0712) 9:00 – 10:20, 22<sup>nd</sup> March

A3-1: Analysis of Motor Imagery Timing for Asynchronous BCI

Takaki Enomae and Hisaya Tanaka (Kogakuin University)

A3-2: Relationship of Mental Models with Eye Movement during Operation of the User Interface

Rika Kato and Toshiki Yamaoka (Kyoto Women's University)

A3-3: Analysis of Factors Affecting Satisfaction of the Smartphone Application among the Elderly

Ayako Hashizume and Shuwa Kido (Tokyo Metropolitan University)

A3-4: Psychophysiological Characteristics of Older Drivers on Highway using Driving Simulator

> Se Jin Park, Murali Subramaniyam and Seoung Eun Kim (Korea Research Institute of Standards and Science, Electronics and Telecommunications Research Institute)

B3: Interaction ----- (Room A0715) 9:00 – 10:20, 22<sup>nd</sup> March

### **B3-1:** Features of Value Creation Process in Career Coaching

Yuri Hamada and Hiroko Shoji (Chuo University)

### **B3-2:** The Analysis and Design of Collaborative Composition System

Meguru Yamashita, Kiwamu Sato, Naohito Ogasawara and Hiroshi Nunokawa (Iwate Prefectural University)

## **B3-3:** A Study of the Process of Establishing of a Network to Promote Cross-referencing and Collaboration among Local Voluntary Groups

Challenges and Possible Solutions for a Case of Interaction Design and Implementation Tomomi Maekawa (Tokyo Institute of Technology) David Aron (University of Tsukuba)

Kazuki Kagohashi and Michael T. Seigel (Nanzan University)

### **B3-4:** Consideration about an effective information providing method

Operation display with coin lockers as an example

Yukari Waki and Toshiki Yamaoka (Kyoto Women's University)

### 10:40 - 12:20 Oral Presentation Sessions

A4: Fashion ----- (Room A0712) 10:40 - 12:20, 22<sup>nd</sup> March

#### A4-1: Apparel Textile Retrieval System Based on Kansei Information for E-Commerce

Masayuki Takatera, Ran Yoshida, Moe Yamazaki, Julie Peiffer, KyoungOk Kim (Shinshu University) and Keiko Miyatake (Kyoritsu Women's University)

A4-2: Relationship between pattern making methods and garment appearance

Chinami Fujii, Masayuki Takatera and KyoungOk Kim (Shinshu University)

### A4-3: Size change of 3D garment model preserving original shape

Jun Zhang, KyoungOk Kim and Masayuki Takatera (Shinshu University)

### A4-4: Analysis of 3D Shapes of Liquid Soap Bottles Using Spherical Harmonics

Ryota Miyawaki, Masashi Komori, Kumiko Kokubo (Osaka Electro-Communication University), Chika Nagaoka (Otemon Gakuin University) and Takumi Yokoyama (Kracie Home Products, Ltd.)

### A4-5: Effect of Various Finishing Treatments on Handle and Appearance of Wool Tweed Fabrics

Machiko Murakami (Gifu City Women's College), Takako Fujimoto (Hokkaido University of Education), Masukuni Mori (Mori Engineering Office) and Surinder K. Tandon (former AgResearch Ltd.) B4: Software and Cognition ----- (Room A0715) 10:40 – 12:20, 22<sup>nd</sup> March

#### **B4-1:** The extraction requirements using KH-Coder

Ai Murata and Toshiki Yamaoka (Kyoto Women's University)

#### **B4-2:** Web Tool of the UX Graph

Ayako Hashizume (Tokyo Metropolitan University), Yuuki Ueno, Takeshi Tomida, Hirotoshi Suzuki (Otsuka Business Service) and Masaaki Kurosu (The Open University of Japan)

### B4-3: Visuomotor Coordination in Straight Hitting Movements for Oncoming Objects in Front of Observers

Masahiro Suzuki, Hiroshi Unno, Piyarat Silapasuphakornwong and Kazutake Uehira (Kanagawa Institute of Technology)

### B4-4: Optimal gathering ratios of fabric for texture expression in online shopping

Comparison between Observer groups: clothing and engineering

Tomoharu Ishikawa, Nozomi Nishi, Erina Kobayashi, Kazuya Sasaki (Utsunomiya University), Keiko Miyatake (Kyoritsu Women's University) and Miyoshi Ayama (Utsunomiya University)

### B4-5: Effects of Chromaticity, Lightness and Gloss on Gold, Silver and Copper Color Appearances

Tomohisa Matsumoto (Tokyo Institute of Technology), Kazuho Fukuda (Kogakuin University) and Keiji Uchikawa (Tokyo Institute of Technology) Access Map

Kogakuin University, Shinjuku Campus 1-24-2 Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-8677 Tel: 03-3342-1211 (main switchboard)

# **Transportation from Narita & Haneda** Airport



Narita Airport	Narita Express (approx. 80 min.)			Sh	
Narita Airport	Keisei Skyliner (approx. 60 min.)	Ueno	JR Yamanote Line (approx. 24 min.)	Shin	
Narita Airport	Airport bus (approx. 85 min.)			Sh	
Narita Airport	Airport bus (approx. 160 min.) JR Chuo Line (approx. 35 min.) Keio Line (approx. 34 min.) Airport bus (approx. 35 min.)			Ha	
Shinjuku				Har	
Shinjuku				Ha	
Haneda Airport				Sh	
Haneda Airport	Airport bus (approx. 75 min.)			Ha	
Haneda Airport	Keihin Kyuko Line (approx. 13 min.)	Shinagawa -	JR Yamanote Line (approx. 18 min.)	Sh	
Haneda Airport	Tokyo Monoral (approx. 13 min.)	Hamamatsucho -	JR Yamanote Line (approx. 21 min.)	Sh	

# International Society of Affective Science and Engineering

# Access Map

### Kogakuin University, Shinjuku Campus 1-24-2 Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-8677

Tel: 03-3342-1211 (main switchboard)



•A five-minute walk from JR Shinjuku Station, west exit

•A five-minute walk from Shinjuku Station on the Keio, Odakyu, Toei, or Tokyo Metro lines

•A three-minute walk from Tochomae Station on the Toei Oedo Line •A 10-minute walk from Seibu Shinjuku Station on the Seibu Shinjuku Line

Floor 7, Venue Map





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