

External Awards

The Honorable Mention Paper

Winner: Hidetomo Sakaino, NTT Network Technology Laboratories

Date: June 1, 2016

Organization: The Institute of Electrical and Electronics Engineers (IEEE) Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm) 2016 committee

For “A Dynamic Stochastic Optimization Control Model for Data Centers Based on Numerical Modeling.”

Published as: H. Sakaino, “A Dynamic Stochastic Optimization Control Model for Data Centers Based on Numerical Modeling,” Proc. of ITherm 2016, pp. 675–684, Las Vegas, NV, USA, May/June 2016.

Young Scientist Award

Winner: Hiroshi Hamada, Toshihiko Kosugi, Ho-Jin Song, Hideaki Matsuzaki, Amin El Moutaouakil, Hiroki Sugiyama, Makoto Yaita, Takuro Tajima, Hideyuki Nosaka, and Osamu Kagami, NTT Device Technology Laboratories; Yoichi Kawano, Tsuyoshi Takahashi, Yasuhiro Nakasha, and Naoki Hara, Fujitsu Limited; Katsumi Fujii, Issei Watanabe, and Akifumi Kasamatsu, National Institute of Information and Communications Technology (NICT)

Date: August 24, 2016

Organization: International Union of Radio Science (URSI)

For “20-Gbit/s ASK Wireless System in 300-GHz-band and Front-ends with InP MMICs.”

Published as: H. Hamada, T. Kosugi, H. Song, H. Matsuzaki, A. Moutaouakil, H. Sugiyama, M. Yaita, T. Tajima, H. Nosaka, O. Kagami, Y. Kawano, T. Takahashi, Y. Nakasha, N. Hara, K. Fujii, I. Watanabe, and A. Kasamatsu, “20-Gbit/s ASK Wireless System in 300-GHz-band and Front-ends with InP MMICs,” Proc. of URSI Asia-Pacific Radio Science Conference, Seoul, Korea, Aug. 2016.

JSAP Fellow

Winner: Tetsuomi Sogawa, NTT Basic Research Laboratories

Date: September 13, 2016

Organization: The Japan Society of Applied Physics (JSAP)

For his research on control of photonic and spin-related properties in semiconductor quantum structures by surface acoustic waves.

JSAP Young Scientist Award

Winner: Pierre-Alix Carles, NTT Basic Research Laboratories

Date: September 13, 2016

Organization: JSAP

For “Deviation from the Law of Energy Equipartition in a Small Dynamic-random-access Memory.”

Published as: P. Carles, K. Nishiguchi, and A. Fujiwara, “Deviation from the Law of Energy Equipartition in a Small Dynamic-random-access Memory,” Jpn. J. Appl. Phys., Vol. 54, 06FG03, 2015.

Paper Award

Winner: Takeshi Mishima and Yasuhiro Fujiwara, NTT Software Innovation Center

Date: September 14, 2016

Organization: WebDB Forum 2016 committee

For “Database Live Migration Middleware in Cloud Environment.”

Published as: T. Mishima and Y. Fujiwara, “Database Live Migration Middleware in Cloud Environment,” IPSJ TOD, Vol. 9, No. 1, 2016.

CollabTech Best Paper Award

Winner: Xun Cao, Kyoto University; Naomi Yamashita, NTT Communication Science Laboratories; Toru Ishida, Kyoto University

Date: September 16, 2016

Organization: Information Processing Society of Japan (IPSJ) Special Interest Groups on Groupware and Network Services

For “How Non-native Speakers Perceive Real-time Listening Comprehension Problems: Implications for Adaptive Support Technologies.”

Published as: X. Cao, N. Yamashita, and T. Ishida, “How Non-native Speakers Perceive Real-time Listening Comprehension Problems: Implications for Adaptive Support Technologies,” Proc. of Collab-Tech 2016 (the Eighth International Conference on Collaboration Technologies), Kanazawa, Ishikawa, Japan, Sept. 2016.

Duke’s Choice Award (Tool Award)

Winner: Yuji Kubota and Shinji Takao, NTT Software Innovation Center; Yasumasa Suenaga, NTT Comware

Date: September 20, 2016

Organization: Java Community/Oracle

For development of HeapStats.

HeapStats is a lightweight Java troubleshooting analysis tool that uses JVMTI (Java Virtual Machine Tool Interface) and SIMD (single instruction multiple data) instructions in x86 and ARM for optimization.

Communications Society: Distinguished Contributions Award

Winner: Kazuhide Nakajima, NTT Access Network Service Systems Laboratories

Date: September 21, 2016

Organization: The Institute of Electronics, Information and Communication Engineers (IEICE) Communications Society

For his contribution as a manager of the IEICE Ad Hoc Technical Committee on Extremely Advanced Optical Transmission Technologies (EXAT).

Communications Society: Distinguished Contributions Award

Winner: Jun Mashino, NTT Network Innovation Laboratories

Date: September 21, 2016

Organization: IEICE Communications Society

For his contribution as a secretary assistant of the IEICE Technical Committee on Radio Communication Systems (RCS).

Communications Society: Distinguished Contributions Award

Winner: Tadao Nakagawa, NTT Network Innovation Laboratories

Date: September 21, 2016

Organization: IEICE Communications Society

For his contribution to the management and invigoration of the executive committee of the IEICE Communications Society.

Communications Society: Distinguished Contributions Award

Winner: Takeshi Kinoshita, NTT Network Innovation Laboratories

Date: September 21, 2016

Organization: IEICE Communications Society

For his contribution to the operation of international symposia hosted by the IEICE Technical Committee on Network Virtualization.

Technical Director Award (Interactive Category) of the 2016 56th ACC CM Festival

Winner: Hidenobu Nagata, NTT Service Evolution Laboratories

Date: September 28, 2016

Organization: All Japan Radio & Television Commercial Confederation (ACC)

For “Cho Kabuki Supported by NTT.”

Highly realistic and new forms of kabuki viewing experience are provided using the immersive telepresence technology “Kirari!”.

APSIPA Industrial Distinguished Leader

Winner: Takehiro Moriya, NTT Communication Science Laboratories

Date: October 7, 2016

Organization: Asia-Pacific Signal and Information Processing Association (APSIPA)

For his extraordinary accomplishments in the field related to APSIPA scope.

Papers Published in Technical Journals and Conference Proceedings

Lightness and Brightness Match under Colored Illuminants with Special Illuminant Gradients

H. Kawamura, M. Date, T. Yamakawa, T. Kojima, M. Miyao, and A. Kojima

Proc. of AIC (International Colour Association) 2016 Interim Meeting, pp. 417–420, Santiago, Chile, October 2016.

This paper reports an investigation of perceived colors under colored illuminants with spatial illuminant gradients. In performed experiments, two types of illuminant distribution were used; in one the illuminant strength changes suddenly at the center of an image and in the other the strength changes linearly throughout the right and left side of the image. Subjects were asked to match the test patch area to identify the same luminance as the reference one (called the brightness match) or to match the area to be cut from the same piece of paper as the reference one (called the lightness match) under white illuminant or reddish illuminant. The results showed that the response of the subjects in the brightness match is affected by the luminance of the test patch area; however, with the lightness match the response is slightly more stable than the brightness match. This tendency

occurred in both illuminant distribution patterns. When using a reddish illuminant, the response of the subjects was lower than that for the white illuminant.

Collapse of the Hierarchy of Constant-depth Exact Quantum Circuits

Y. Takahashi and S. Tani

Computational Complexity, Vol. 25, No. 4, pp. 849–881, December 2016.

We show that there exists a constant-depth polynomial-size quantum circuit for the OR function. We apply this circuit to constructing a constant-depth quantum circuit for the threshold function. Moreover, we show that there exists a classically hard problem that can be solved by a constant-depth quantum circuit with gates for the quantum Fourier transform.
