



## NTT Communication Science Laboratories

# OPEN HOUSE

# 2013

Thursday,  
June 6

12:00~17:30

Friday,  
June 7

9:30~16:00

No Admission Charge  
No Pre-Registration Required

Venue: **NTT Keihanna Building** 2-4 Hikaridai Seika-Cho Soraku-Gun,  
Kyoto, 619-0237, Japan

### Oral Presentations

#### ● Thursday, June 6

##### Director's Talk

**13:00-13:30 Cultivate trees that will bear fruit**  
-Building a technical infrastructure that connects people and information-  
*Eisaku Maeda, Director, NTT Communication Science Laboratories*

##### Invited Talk

**13:40-14:40 New technology from/with mathematics and new mathematics from industry**  
*Masato Wakayama, Director, Institute of Mathematics for Industry, Kyusyu University*

##### Research Talk

**14:50-15:30 Towards a computer that can recognize everyone's conversations**  
-Research on multi-speaker conversational speech recognition: past, present and future-  
*Takaaki Hori, Media Information Laboratory*

#### ● Friday, June 7

##### Research Talks

**11:00-11:40 The reality of the body** -How we perceive our own body-  
*Norimichi Kitagawa, Human and Information Science Laboratory*

**13:00-13:40 Innovative user experiences brought by statistical machine translation**  
-Breaking the language barriers of technical information-  
*Masaaki Nagata, Innovative Communication Laboratory*

**13:50-14:30 Extracting hidden information from speech and audio signals**  
-Generative modeling approach to speech and audio signal processing-  
*Hirokazu Kameoka, Media Information Laboratory*

### Exhibition Program Introduction to Research Contents and Findings

#### ■ Big Data Analysis

- **Challenges with big data** -Recent big data analysis at NTT Laboratories-
- **Understanding stream data from essential elements** -Feature selection for high-dimensional time series data-
- **Smarter instant analysis of "Current" with big data** -Streaming analysis with distributed online machine learning-
- **Efficient graph mining techniques for big data** -Fast algorithms for large-scale graphs-
- **Network anomaly detection using big data analysis** -Analyzing network failure/cyber attacks and their root causes-
- **What is the author like?** -Estimation of microblog user attributes using microblog structure-
- **Massive trajectory data analysis and visualization** -Mobility pattern analysis using heterogeneous data-

#### ■ Human Science

- **Mystery of child word learning order** -Cross-linguistic universality of child word learning periods-
- **How children perceive phonemically similar words** -Perceptual development of Japanese phonemes in children-
- **When breath meets music** -Playback system synchronizing phrases with respiration phases-
- **Speak like a native** -Speech rhythm control by non-negative temporal decomposition-
- **How we feel fatigue and force** -Motor perception influenced by delayed visual feedback-
- **Future alters past** -Postdictive processing in vision-
- **Visual magic: Changing an object just by watching** -Visual illusion reveals neural codes for objects in the brain-
- **Hearing the body** -Action sounds recalibrate the perceived tactile distance-

#### ■ Innovative Computing

- **Efficient environmental monitoring** -Correlated data gathering for sensor network-
- **Exposing your whereabouts safely** -Location privacy by using pseudonym exchange-
- **Quantum information exchange employing optics** -Optimal entanglement generation protocol with laser light-
- **Making proper randomness** -Physical random numbers generated by laser light-
- **A visual language for advanced programming** -Viscuit with new functions for advanced programming-
- **Automatic grammatical analysis of English** -Syntactic parsing based on statistical grammar induction-

#### ■ Media and Communication

- **How can we overcome language barriers?** -Statistical machine translation from foreign languages to Japanese-
- **Yu bi Yomu: Reading experience based on trailing** -A new method for reading dynamic texts using finger movements-
- **Ways to support non-native speakers in a conference call** -How transmission lags influence multilingual communication-
- **Seeing into the mind in the twinkle of a smile** -Analyzing expression/perception of interlocutors' empathy-
- **Speech separation with collaborative recorders** -Probabilistic fusion of different recording devices-
- **Transcribing every word whoever speaks** -Speech recognizers robust to casual speech variations-
- **Transcribing known and unknown sounds** -Bayesian semi-supervised audio event recognition -
- **Instance search from large video collections** -Video search technology with visual examples-
- **Finding picture books suitable for a child** -Graph-based similar picture book search with weighted child words-

### Social Gathering

We will hold a social gathering on June 6th 17:30-19:00. We look forward to exchanging opinions with visitors.

### Access

- From Shin-Hosono Station (Kintetsu Kyoto Line) or Hosono Station (JR Gakken Toshi Line) 15 Minutes by Bus or 10 Minutes by Taxi
  - From Gakken Nara Tomigaoka Station (Kintetsu Keihanna Line) 15 Minutes by Bus or 10 Minutes by Taxi
- <http://www.kecl.ntt.co.jp/rps/access-keihanna.html>

### Contact

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For more information on NTT Communication Science Laboratories OPEN HOUSE 2013, please visit the website at <http://www.kecl.ntt.co.jp/openhouse/2013/>