



Center of Human-friendly Robotics Based on Cognitive Neuroscience  
A JSPS Global Center of Excellence at Osaka University

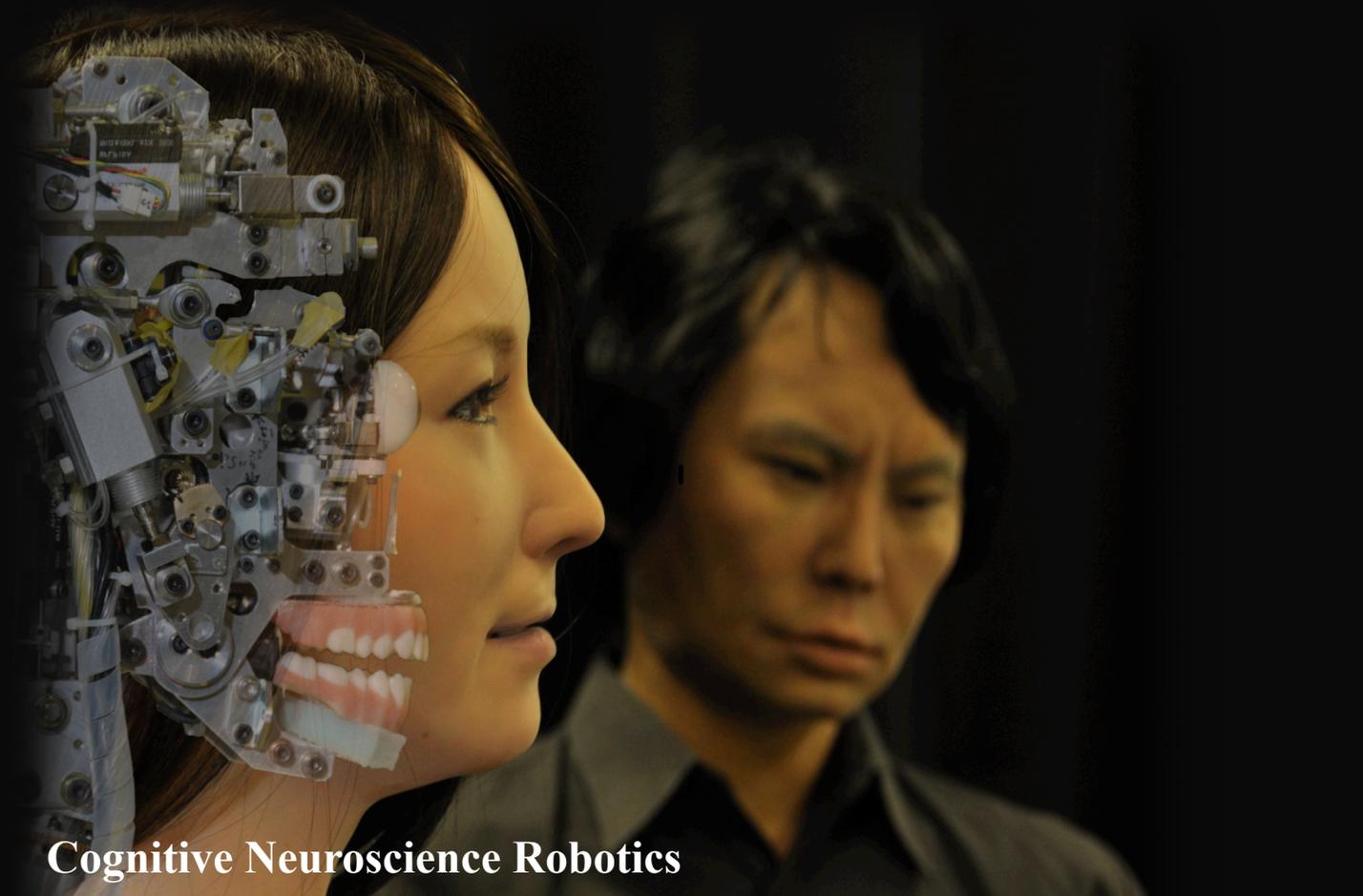


UCSD Temporal Dynamics of Learning Center  
An NSF Science of Learning Center

# Osaka-UCSD Workshop 2011

John Muir Room, Price Center East, UC San Diego

March 15-16, 2011



## Cognitive Neuroscience Robotics

The Global Center of Excellence “Center of Human-friendly Robotics Based on Cognitive Neuroscience” of Osaka University aims to develop new Information and Robot Technology (IRT) systems that can provide information and services based on understanding *cognitive neuroscience*. Cognitive neuroscience concerns meta-level brain functions such as memory and reasoning. While traditional technologies have made our society convenient, their effects on our cognitive functions have been disregarded. In order to reveal their problems and to establish a new design principle for safe and adaptable IRT systems, this Global COE integrates our world-famous research in robotics, cognitive science, and neuroscience, being conducted at Osaka University, ATR (Advanced Telecommunications Research Institute International), and NICT (National Institute of Information and Communications Technology) in Japan. (<http://www.gcoe-cnr.osaka-u.ac.jp/english/>)

## Science of Learning

The goals of the National Science Foundation Science of Learning Centers are to advance the frontiers of all the sciences of learning through integrated research; to connect the research to specific scientific, technological, educational, and workforce challenges; to enable research communities to capitalize on new opportunities and discoveries; and to respond to new challenges. The Temporal Dynamics of Learning Center at UCSD is an NSF funded Science of Learning Center. Its purpose is to understand how the element of time and timing is critical for learning and to apply this understanding to improve educational practice.

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## Tuesday, March 15

- 09:00-09:10      Opening
- 09:10-10:40      **Humanoid, Android and Human-like media**  
Hiroshi Ishiguro, *Grad. School of Engineering Science, Osaka University and ATR*  
**Brain Solution for Inverse Dynamic**  
Terrence J. Sejnowski, *Computational Neurobiology Laboratory, Salk Institute*  
**The role of prefrontal cortex in working memory**  
Takashi Ikeda, *Grad. School of Human Sciences, Osaka University*
- 10:40-11:00      Break
- 11:00-12:30      **Motor development of musculoskeletal infant robot**  
Kenichi Narioka, *Grad. School of Information Science and Technology, Osaka University*  
**TBA**  
Gedeon O. Deák, *TDLC, UC San Diego*  
**Learning to communicate: Can robotics approaches offer new insight into infant development?**  
Yukie Nagai, *Grad. School of Engineering, Osaka University*
- 12:30-13:30      Lunch
- 13:30-14:30      **Human brain-machine interface (BMI)**  
Toshiki Yoshimine, *Grad. School of Medicine, Osaka University*  
**Recent advances in neurophysiology, neurotechnology and computational approaches for Passive Brain-machine Interface**  
Tzyy-Ping Jung, *TDLC, UC San Diego*
- 14:30-15:00      Break
- 15:00-18:00      **Lab tour at UCSD and Salk Institute**
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## Wednesday, March 16

- 09:00-10:30      **Acquisition of Written Language Without Formal Instruction**  
Dominic Massaro, *UC Santa Cruz*  
**Enhancing Cognitive and Language Development Using New Technologies**  
Paula Tallal, *TDLC, Rutgers*  
**Psychological evaluation of humanoid robots**  
Hiroko Kamide, *Grad. School of Engineering Science, Osaka University*
- 10:30-11:00      Break
- 11:00-13:00      **Closed discussion on new research themes**
- 13:00-13:10      Closing
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