

Fri. March 15th, 2013

12:30 - 14:00 | **room 601** | **in English** (no translation)

New Frontiers of Telerobotics: Thought-based control and physical embodiment

Speaker Abderrahmane KHEDDAR (CNRS-AIST Joint Robotics Laboratory UMI3218/CRT)

Discussant Guy FAURE (UMIFRE 19, MFJ; CNRS Regional Office, Tokyo)

This talk concerns the ongoing new research projects in telerobotics and its challenges. The first challenge is to realise thought-based control, by which telerobots tasks are instructed directly from the interpretation of the human operator's brain activities. The second challenge is the issue of achieving physical embodiment; that is, what are the motor-sensory feedbacks and mechanisms by which a human operator can feel strongly embodied in a telerobot.

When the telerobot exhibits anthropomorphism, namely when humanoid robots are in play, specific considerations and application perspectives are brought to light at the confluence of thought-based control and physical embodiment. In fact, embodiment relates more to cognitive science of consciousness, self-awareness, and self-other representations that we synthesize here with a narrow view of the telerobotic context.

These concepts and technologies are nowadays at their infancy, yet different communities actively investigate them.



Abderrahmane KHEDDAR received a PhD degree in robotics from the University of Paris 6.

He is presently the Director of the CNRS-AIST Joint Robotics Laboratory UMI3218/CRT, Tsukuba, and is also leading the "Interactive Digital Humans" team that he created in Montpellier, France.

His research interests include haptics, humanoids and brain machine interfaces. He has more than 160 scientific publications. The New Scientist, and the Reuters Press Agency advertised his recent work in multi-contact planning. The New Scientist and the DigInfo TV advertized his recent projects on mind-controlled robots.



Guy FAURE received his PhD in Politics at the EHESS in Paris (1982). He is presently a Senior Research Fellow, and the CNRS Representative for North Asia (Japan, South Korea and Taiwan). Previously, he was Director of the Lyon Institute of East Asian Studies, and head of the master course

in Asian Politics at the Ecole Normale Supérieure de Lyon (2008-2010), Director of the French Research Institute on Contemporary Southeast Asia in Bangkok (2004-2008), Executive Director of the CCIFJ (1987-1992), and former Fellow at the Maison francojaponaise in Tokyo (1983-1986).

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French Research Institute on Japan at Maison franco-japonaise
3-9-25, Ebisu, Shibuya-ku, 150-0013 Tokyo



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