Title: Robot audition and its deployment

Abstract: Auditory processing is essential for a robot since it is necessary for low level sensory functions such as environmental map generation, sound event detection, and for high level functions such as human-robot communication. Robot audition was proposed to realize such functions using a robot¹s own ears in 2000. We have been tackling one of the main problems in robot audition, that is, inevitable noise contamination of every input signal with environmental noise, interruption by other speakers, and a robot¹s own ego-noise. I will present noise-robust auditory functions for robot audition based on microphone array processing such as sound source localization, sound source separation and automatic speech recognition with open source software for robot audition called HARK (Honda Research Institute Japan Audition for Robots with Kyoto University). In addition, I will introduce our activities for deployment of robot audition such as a rescue robot, in-vehicle infotainment, a tablet device to be used as a hearing aid, and for international communication support, ethology such as bird song analysis, and so on.

Short Biography: Kazuhiro Nakadai is a principal researcher in Honda Research Institute Japan Co., Ltd., and concurrently he has two visiting professor positions at Tokyo Institute of Technology and at Waseda University. He previously worked with Nippon Telegraph and Telephone (NTT) (1995-1999), and the Kitano Symbiotic Systems Project, ERATO, JST (1999-2003). He received a Ph.D. in electrical engineering (2003), an M.E. in information engineering (1995), and a B.E. in electrical engineering (1993) from the University of Tokyo. His research interests include computational auditory scene analysis, multi-modal integration and robot audition.