Novel User Interfaces for Ubicomp

By: Koji Tsukada
February 22, 2011

Abstract:
The realization of ubicomp (ubiquitous computing) is one of the most prospective challenges for computer science in this century. Although many hardware and software technologies for ubicomp have developed so far, yet many challenges still remain unsolved especially in the field of HCI (Human Computer Interaction).

This talk introduces the speaker's practical approaches of user interfaces for ubicomp, including novel input/capturing/display techniques in daily environment. For example, following systems (and much more) will be introduced in this talk:

- IODisk: Disk-type I/O interface for browsing digital contents (2010)
  IODisk is a disk-type I/O interface that helps users browse various digital contents intuitively in their living environment. IODisk mainly consists of a force-feedback mechanism integrated in the rotation axis of a disk. Users can control the playing speed/direction contents (e.g., videos or picture slideshows) in proportion to the rotational speed/direction of the disk.

- DrawerFinder: Finding items in storage boxes using pictures and visual markers (2011)
  DrawerFinder is a novel search technique that helps users find commodities stored in storage boxes with drawers on a shelf. By capturing pictures of the commodities stored in boxes with visual markers using a digital camera attached on the shelf, users can then browse these pictures using a common web browser.

- MediAlarm: alarm-type interface integrating various media (2010)
  MediAlarm is a novel alarm-clock interface which can wake people using a combination of various media, such as sound, lighting, vibrations, room temperature, and SNS (Social Networking Services).

About the Speaker:
Koji Tsukada is an assistant professor in Academic Production at Ochanomizu University since 2008 as well as a researcher of JST PRESTO since 2010. Before joining Ochanomizu University, he had been a researcher at AIST for three years. He received his Ph.D. from Keio University in 2005. His research interests include human computer interaction, ubiquitous computing, home
applications, and prototyping tools.

e-mail: tsuka@acm.org