

# NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

## C S S E M I N A R

**Title: Advance Robotics Center Colloquium: Cognitive Assistant For The Visually Impaired**

Speaker: Dr Chieko Asakawa  
IBM Research, Tokyo  
Carnegie Mellon University

Date/Time: 14 February 2017, Tuesday, 10:00 AM to 11:00 AM

Venue: SR1, COM1-02-06

Chaired by: Dr Hsu, David, Professor, School of Computing  
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### Abstract:

I will talk about cognitive assistant for people with visual impairments and elderly people. Cognitive assistant means to augment or supplement missing or weakened abilities of people with disabilities and elderly people, using the power of cognitive computing technologies or AI. I will focus on cognitive assistant for the blind. I will first briefly talk about the information accessibility from the braille digitalization to the Web accessibility. Then, I will focus on the current work on the real-world accessibility to help the blind explore in a city and enjoy the surrounding views. Cognitive assistant technology for the visually impairments is divided into four categories, such as highly accurate localization using multiple sensors, the vision technology, knowledge-based, and the interaction technology. The talk also includes some of the demonstrations that are available on App Store, named NavCog. I will then envision the future world that is enabled by technology for everybody to live in a society actively using the power of technologies.

### Biodata:

Chieko Asakawa has been instrumental in furthering accessibility research and development for three decades. She has been blind since the age of 14. By challenging traditional thinking on how the visually impaired use technology, she has explored solutions to improve Web accessibility and usability for the visually impaired and others with special needs. Series of pioneering technologies generated under Chieko's leadership significantly contributed in advancing Web accessibility, including groundbreaking work in digital Braille and voice browser. Today, Chieko is working also as a visiting professor at Carnegie Mellon University, and focusing on advancing cognitive assistant research to help the blind regain information by augmenting missing or weakened abilities in the real world.

She is a member of the Association for Computing Machinery (ACM), the Information Processing Society of Japan, and IBM Academy of Technology. She was inducted into the Women in Technology International (WITI) Hall of Fame in 2003. Chieko was appointed to IBM Fellow in 2009, IBM's most prestigious technical honor. In 2013, the government of Japan awarded the Medal of Honor with Purple Ribbon to Chieko for her outstanding contributions to accessibility research, including the development of the voice browser for the visually impaired.