THE CHINESE UNIVERSITY OF HONG KONG
Department of Electronic Engineering

SEMINAR

Conversational Agents with Human-like Emotion and Ethics

By

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Time: 3:00 p.m.
Venue: Room 418 Ho Sin Hang Engineering Building

Abstract:

For the successful interaction between human and digital companion, i.e., machine agents, the digital companions need be able to bind with human-like ethics as well as to make emotional dialogue, understand human emotion, and express its own emotion. In this talk we will present our approaches to develop human-like ethical and emotional conversational agents as a part of the Korean Flagship AI Program. The emotion of human users is estimated from text, audio, and visual face expression during verbal conversation, and the emotion of intelligent agents is expressed by speech and facial expression. Specifically, we will show how our ensemble networks won the Emotion Recognition in the Wild (EmotiW2015) challenge with 61.6% accuracy to recognize 7 emotions from facial expression. Then, a multimodal classifier combines text, voice, and facial video for better accuracy. Also, a deep learning based Text-to-Speech (TTS) system will be introduced to express emotions. These emotions of human users and agents interact each other during the dialogue. Our conversational agents have chitchat and Question-and-Answer (Q&A) modes, and the agents respond differently for different emotional states in chitchat mode. Then, the internal states will be further extended into trustworthiness, implicit intention, and personality. Also, we will discuss how the agents may learn human-like ethics, especially fairness, during the human-machine interactions.

Biography:

Soo-Young Lee is Director of KAIST Institute for Artificial Intelligence, and a professor emeritus of Electrical Engineering at Korea Advanced Institute of Science and Technology, and a Fellow of International Neural Network Society. In 1997, he established the Brain Science Research Centre at KAIST, and led Korean Brain Neuroinformatics Research Program from 1998 to 2008 with dual goals, i.e., understanding brain information processing mechanism and developing intelligent machine based on the algorithm. He is now leading Emotional Conversational Agent Project, a Korean National Flagship AI Project, with about 20 professors and 5 organizations. He was President of Asia-Pacific Neural Network Society in 2017, and had received Presidential Award from INNS and Outstanding Achievement Award from APNNA. His research interests have resided in the artificial cognitive systems with human-like intelligent behavior based on the biological brain information processing. He has worked on speech and image recognition, natural language processing, situation awareness, internal-state recognition, and human-like dialog systems. Especially, among many internal states, he is interested in emotion, sympathy, trust, and personality. Both computational models and cognitive neuroscience experiments are conducted. His group marked Top-1 for the emotion recognition challenge from facial images (EmotiW; Emotion Recognition in the Wild) in 2015 and rd ranked at ConvAI2017 challenge.

ALL ARE WELCOME

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