



## ***Professor Soo-Young Lee***

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**Topic: Deep Learning and Human Audio-Visual Pathways**

**ABSTRACT.** Recently deep learning had attracted a lot of attention from both academic and industrial communities for image and speech recognition tasks. However, the basic models are not new and have strong connection to the audio and visual processing models in our brain. This Lecture will bring the connection between deep neural networks and cognitive computational models for audio-visual information processing. We will first discuss the cognitive scientific facts on information processing mechanism in human audio and visual pathways, and then move to the computational models in the form of deep learning for the hierarchical feature extraction, stereo/binaural spatial information processing, selective attention, and audio-visual integration.

### **Biodata:**

Soo-Young Lee is a professor of Electrical Engineering at Korea Advanced Institute of Science and Technology. In 1997, he established the Brain Science Research Centre at KAIST, and led Korean Brain Neuroinformatics Research Program from 1998 to 2008. He is now also a Co-Director of Center for Artificial Intelligence Research at KAIST, and leading Emotional Dialogue Project, a Korean National Flagship Project. He is President of Asia-Pacific Neural Network Society in 2017 and had received Presidential Award from INNS and Outstanding Achievement Award from APNNS. 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.