



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

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**Topic: Understanding Brain Internal States**

**ABSTRACT.** At the third Lecture we will introduce cognitive neuroscience of brain internal states, aka Mind, which may consist of emotion, personality, intention, etc. The emotion is relatively better studied in cognitive neuroscience and probably the only one with engineering applications at this moment. We will introduce two cognitive neuroscientific findings on the other brain internal states. Especially, we made hypothesis on 2 axes of the internal state space, i.e., agreement/disagreement and trust/distrust to conversational counterparts during conversation and identified fMRI and/or EEG signal components related to those internal states. Then, we will propose a method to utilize these brain signals for generating near-ground-truth labels of brain internal states, which will be used to train classifiers from audio-visual signals.

### **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.