이름: 장호진
직위: 조교수
소속: 고려대학교 정보대학 뇌공학과
기타소속:

강연제목: Leveraging deep neural networks to model human visual representational robustness in challenging conditions

Abstract:

Deep Neural Networks (DNNs) provide valuable insights into the human visual system by allowing comparisons between neural and artificial representational spaces. This talk presents two studies examining how DNNs and human vision respond under suboptimal and noisy conditions. The first study shows that noise-trained networks closely align with human visual processing, predicting recognition thresholds and mimicking human representational robustness in noisy environments. The second study reveals that networks trained on blurred inputs better reflect biological vision, with representations that emphasize shape sensitivity and reduce reliance on high-spatial frequency features. These findings highlight the potential of DNNs to model human visual representations while also highlighting the unique characteristics of biological perception that extend beyond current artificial models.

Brief Biosketch:

Dr. Jang is an Assistant Professor in Brain and Cognitive Engineering at Korea University and a Research Affiliate in Brain and Cognitive Sciences at MIT. Previously, Dr. Jang was a Postdoctoral Researcher at MIT (2022-2024) and Vanderbilt University (2021-2022). Dr. Jang completed a Ph.D. in Psychology at Vanderbilt University in 2021, following an M.Eng. in Brain and Cognitive Engineering (2016) and a B.Sc. in Computer Science (2014) at Korea University.