Topic
Understanding User Cognition for Human-Computer Interaction

Intro
Researchers of Human-computer Interaction (HCI) often adapt behavioral indicators or self-report methods to proxy users' cognitive states. However, it is difficult to determine how the interventions influence users' different cognitive states via behavioral and self-report methods alone. Moreover, some implicit and constantly changing cognitive states that heavily affect users' experience and decision-making (e.g., attention shifting and working memory) are hard to be measured by these methods without interrupting users during experiments. These challenges often cause inconsistent results and superficial interpretations in prior studies. Hence, I will present the projects utilizing brain-sensing techniques to measure users' cognitive states that are critical for the research topic related to audio notification and social bias in online rating. These works generate neural-based design implications for designers and researchers to effectively and appropriately designate users' cognitive resources to tailor to various tasks and contextual environments. In the end, I will share some thoughts about future research directions combining HCI and cognitive neuroscience.

Bio
Dr. Fu-Yin Cherng is an adjunct assistant professor and postdoctoral researcher in the Dept. of Information Management at NTU. Before joining NTU, she was a postdoctoral researcher in the Dept. of Computer Science at UC Davis. She received a Ph.D. degree from the Dept. of Computer Science at NCTU, Taiwan, in 2019. From 2016 to 2017, Fu-Yin was a doctoral research assistant for Prof. Pierre Dillenbourg at EPFL in Switzerland. Fu-Yin's general research interest is Human-computer Interaction, focusing on understanding users' cognitive processes with physiological indicators. She has also worked on the derivation of design implications using data science techniques and crowdsourcing. Fu-Yin has published several papers, including two papers receiving the CHI best paper honorable mention award within five years at top-tier conferences and journals. As an active researcher, she has served as a committee member in MobileHCI'19 and TAICHI'20, and reviewer for ACM CHI, CSCW, IEEE VR, etc.