A System based on Cognitive Architecture to Prevent Rumination while Web Searching (研究の進捗発表)

A System based on Cognitive Architecture to Prevent Rumination while Web Searching

Thanakit Pitakchokchai(情報学専攻)，森田純哉（学術院情報学領域），山本祐輔（学術院情報学領域），遊橋裕泰（学術院情報学領域），高口鉄平（学術院情報学領域）

In this research, we develop a system based on ACT-R (Adaptive Control of Thought-Rational; Anderson, 2007) cognitive architecture to prevent repetitive negative thinking, namely rumination during web searching. The developed system consists of two sub-systems: data collection sub-system and distraction sub-system. The former collects an individual's searching data (e.g., web URL, image URLs) on websites upon visiting and sends to server database through a Chrome extension. The latter includes an ACT-R cognitive model that utilizes such data as well as physiological data (e.g., eye-tracking data and heart rate variability) from the subject to predict rumination while searching websites. In addition, it provides an implicit intervention for rumination based on a concept of "nudge" which unconsciously affects human behavior and decision-making. The system displays product image on the screen as advertisement, and after rumination is detected it changes to mildly remind users not to keep ruminating.