2023-2024 DISTINGUISHED LECTURER SERIES

DR. JEFFREY BOWERS

Tueday, April 30, 2024
2:30-4:00pm

DEEP PROBLEMS WITH NEURAL NETWORK MODELS OF HUMAN VISION

ABSTRACT: Deep neural networks (DNNs) developed in computer science are successful in a range of vision tasks and can predict brain activations of humans (and macaques) better than alternative models. This has led to the common claim that DNNs are the best models of biological vision. Here I show that the success of these models in predicting brain activations is a poor metric for judging the similarity of DNNs and brains, and indeed, these models account for few findings in psychology in the domain vision, and they show similar problems when it comes to language.

DR. JEFFREY BOWERS received his degree in psychology (BSc) at the University of Toronto (1987) and completed a Ph.D. with Daniel Schacter and Kenneth Forster at the University of Arizona (1993) on the topic of long-term priming. He then moved to Montreal for a post-doctoral position at the Montreal Neurological Institute and Centre Hospitalier Cote-Des-Neiges, working with Daniel Bub on letter-by-letter reading (1993-1994). Following this he moved to Rice University as an assistant professor (1994-1998), and then took a position of a lecturer at the University of Bristol, where he is now a professor.

His research addresses a range of issues in language and memory. In one aspect of his work, he seeks to understand the coding of word knowledge in the brain. Another line of his research attempts to further our understanding of the learning mechanisms that support written and spoken word perception. Currently, he is focused on the relation between deep neural networks and the brain, with a focus on vision.

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