RUHR-UNIVERSITÄT BOCHUM

RUB

IGSN - SYMPOSIUM

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AI-based analyses of narratives and their role for cognitive function

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Large Language Models vs Human Brain: mapping and decoding the language code in neural systems

While deep learning has made major progress in natural language processing, these algorithms fall short of the compute and data efficiency of the human brain.
Here, we here systematically evaluate the similarities and differences between these two systems. For this, we collect, gather and analyze large-scale datasets of magneto/electro-encephalography (M/EEG), functional Magnetic Resonance Imaging (fMRI), and intracranial recordings.
After investigating where and when deep language algorithms function similarly to the brain, we show that long-range forecasts make them more similar to it.
This systematic comparison provides an operational foundation to decode language and semantics from brain responses to speech listening, images, videos, reading and text typing.
Overall, these findings underscore the potential of integrating AI and neuroscience to unify cognitive tasks within a common computational framework.

Host:

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