

Use AI to better understand the human mind



Western researchers are using advanced artificial intelligence to improve how we learn, work, stay healthy and make decisions.

AI and neuroscience work hand in hand. Neuroscience provides the biological principles that shape AI models like neural networks, while AI offers powerful tools to analyze complex brain data, accelerate research and drive innovations such as brain-computer interfaces and diagnostic systems for neurological disorders. Together, they advance both our understanding of the brain and the development of new treatments.

By modelling neurocognitive function, how people perceive, process information, learn and make decisions, Western researchers are using AI systems inspired by the human brain to uncover the principles that drive cognition and behaviour. Their work helps answer questions such as: How do people learn new skills? What helps us make choices? And how can AI help us address complex human problems?

This research spans diverse perspectives, from how neural networks mirror human information processing to how attention and memory shape problem solving, and how social and cultural factors influence health and well-being. It also considers historical and evolutionary perspectives, shedding light on the forces that have shaped human behaviour over time.

Researchers are also examining the potential and limits of AI-based models of cognition, identifying where artificial systems mirror real behaviour and where they fall short. Their work focuses on:

- How neural networks mimic human information processing and decision making.
- What AI reveals about learning, cognition and skill development over time.
- The role of memory, attention and perception in complex problem solving.
- Ways this knowledge can improve teaching, mental health support and public services.

By studying the intersection of AI and neurocognition, Western researchers are generating new insights that support healthier, smarter and more resilient societies.

With your support, we can expand our research capacity and shape the next generation of innovation in cognitive science, AI and social systems. Together, we can better understand how people think and apply that knowledge to improve lives.

SPOTLIGHT ON WESTERN RESEARCH

Western researchers are conducting world-leading research that combines AI and neuroscience to push the boundaries of how we study the brain and cognition.

Marieke Mur (psychology and computer science) studies how the human brain perceives and processes visual information by using computational models and AI. Her lab uses a combination of brain imaging, psychophysics and computational modelling to compare brain activity with machine representations. This research aims to identify the strengths and weaknesses of AI in modelling human vision and to develop more effective models of the brain.

Melvyn A. Goodale (Western Institute for Neuroscience) investigates how AI systems perceive facial age, comparing machine-based estimates with human judgements. His research group uses large-scale assessments of AI platforms alongside behavioural studies, examining facial expression, age and gender bias age perception in both humans and algorithms. The goal is to understand where AI exaggerates human perceptual biases and to inform the development of fairer, more accurate face-recognition and age estimation models.

Are you all in? Get in touch.

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