AI and the complexity of pain

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Résumé

Our increasing reliance on AI systems poses an epistemic risk: we might oversimplify complex concepts by viewing them solely through the narrow lens of AI models. This risk occurs because AI systems depend on structured data and generalisable patterns, which often simplify complex phenomena into limited interpretations.

Pain is a complex phenomenon that blends physical, emotional, cultural, and contextual elements). One fundamental puzzle about pain lies in its dual nature: is it physical or mental? When a doctor asks where your pain is, you point to your foot – suggesting it's physical. Yet when they give you aspirin and ask if you feel better, you must look inward to your mental state, not at your foot, to answer.

Some view pain as purely sensory, like a bad smell or touch. Others see it as perceptual, more akin to seeing a tree or hearing a sound – a mental process that interprets sensations. If pain is indeed a perception, what exactly does it help us perceive? While some argue it signals tissue damage or nociception (pressure receptor activity), the relationship isn't straightforward. We often experience pain without tissue damage or nociception, and vice versa.

The complexity of pain serves an important purpose – it allows us to understand and validate the diverse ways people experience and communicate their suffering.
Many AI tools designed to assess pain rely on limited, measurable indicators such as facial expressions, EEG patterns, or behavioural movements. These tools focus on the physical and behavioural manifestations of pain, often neglecting its subjective and emotional dimensions. This method risks reducing pain to what is externally observable, ignoring the deeply personal and contextual aspects that are critical to understanding it. As a result, these tools may reinforce a narrow and homogeneous definition of pain, failing to account for its inherent diversity.

Mots-Clés: pain complexity, pain assessment, AI risk

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