Large Language Models As Enablers Of Optimal Decision Making In The Face Of Cognitive Bias And Overload

Abstract

In an era where cognitive biases often lead consumers to suboptimal choices, this research explores the potential of Large Language Models (LLMs) to mitigate these challenges and promote equitable decision-making. By integrating behavioral economics, psychometrics, and machine psychology, the study investigates whether LLMs can reduce cognitive overload, counteract cognitive biases (e.g., anchoring, recency), and enhance consumer outcomes in various consumption scenarios. This study uses a mixed-methods approach. By comparing human and LLM responses to bias-triggering scenarios and analyzing LLMs' reasoning via reasoning models, the research evaluates the reliability, bias, and ethical implications of AI-driven recommendations.

Three stimulating reflections emerge: First, while LLMs show promise in coding, mathematics, and logics tasks, their ability to tackle issues in social sciences remains underexplored. Specifically, their potential in filtering choices, improving decision efficiency, and their susceptibility to inherited biases should be scientifically measured to assess their ability as decision aids. Second, adapting psychometric scales to assess LLM "behavior" offers novel methodological insights into explainable AI. Third, hybrid human-AI systems may outperform solo approaches, yet optimal balance in decision-making remains unanswered.

Bio

Dr. Davood Wadi is a researcher specializing in the application of AI in consumer behavior, with a focus on consumer decision making and equitable technology design. Their work bridges behavioral science and machine learning, advocating for responsible AI integration in business and education.