

Title: Large language models as a research tool for the behavioral sciences

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Abstract:

Large language models (LLMs) have emerged as powerful tools for research in the behavioral sciences, yet many researchers lack practical experience with these models. This workshop provides a hands-on introduction to LLMs, covering both their underlying mechanisms and concrete research applications. The workshop begins with an accessible overview of how LLMs work, focusing on the transformer architecture, tokenization, and the distinction between embedding models and generative models. Two applied blocks then demonstrate how LLMs can be leveraged for behavioral science research. The first block focuses on text embeddings, showing how vector representations of text can be used to evaluate the semantic relatedness of self-report items, offering new ways to examine construct overlap and redundancy in psychological measurement. The second block turns to short-text classification, using social media posts as a running example. Participants will explore multiple approaches to classifying tweets, ranging from zero-shot classification using instruction-tuned models to supervised fine-tuning on labeled data, learning when and why to choose each approach. All exercises use open models from the Hugging Face ecosystem and run in Google Colab, requiring no local setup. Participants will leave with working code and a practical understanding of how to integrate LLMs into their own research workflows.

Assignment: Active participation

Credit: 2 workshop days