Social sciences and AI joining forces: towards new approaches for computational social sciences

Soemer, Katharina & Grunow, Daniela
Faculty of Social Sciences
Goethe University Frankfurt
Germany {soemer,grunow}@soz.uni-frankfurt.de

Eger, Steffen
Department Computer Science & Artificial Intelligence
University of Technology Nuremberg
Germany
steffen.eger@utn.de

Abstract

While computational social science is seen as an interdisciplinary field of data science and social science, it is often overlooked that qualitative social scientific research plays an important role in the various steps of the research process. In this chapter, we argue that structurally integrating qualitative research methods can fill blind spots and reduce bias in computational social science. To provide a roadmap for the systematic integration of qualitative social scientific research in computational social science, we provide an example case of fine-tuning a large language model with manually annotated data for the task of analyzing social solidarity on social media. We describe a four-step process—concept definition and operationalization (step 1), data collection and sampling (step 2), annotation (step 3) and computing and evaluation (step 4)—that highlights the complementary contributions of each methodological perspective and skill set. The empirical application shows that methods from qualitative and quantitative social scientific research, together with computer science unfold much greater potential than disciplinary approaches for the application of AI methods in the social sciences.