

Human-AI-Interaction in Healthcare: Identifying Factors Contributing to Clinical Utility

Initiative: Künstliche Intelligenz – Ihre Auswirkungen auf die Gesellschaft von morgen

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Advocates of artificial intelligence (AI) promise that technological advances will revolutionize medicine by improving diagnostic accuracy and, thus, reducing medical errors. However, little is known about healthcare providers' acceptance of and interaction with AI-enabled technology. Both distrust and over-trust, as well as poor usability of AI-enabled technology, could prevent the promised improvements to materialize or could even lead to higher levels of errors. Within the proposed research project, three research questions will be addressed: 1) How are healthcare providers' perspectives (e.g., knowledge, attitudes, and expectations) regarding AI related to their aversion or appreciation of algorithmic advice? 2) How does the presentation of AI-enabled advice to healthcare providers influence clinical decision-making? 3) Can a human-factors-optimized AI-enabled support system (that is, one that employs a user interface informed by the results from research questions 1 and 2) reduce medical errors and improve patient safety? An interdisciplinary collaboration between psychologists, radiologists, and computer scientists is optimal for addressing this highly relevant topic. These three disciplines allow for an innovative multimodal methodological approach (quantitative and qualitative surveys, lab experiments and usability trials) to answer the research questions and, in turn, to tackle complex patient safety concerns arising from poor usability and suboptimal human-AI interaction.

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