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

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

Ausschreibung: Künstliche Intelligenz – Ihre Auswirkungen auf die Gesellschaft von morgen - Full Grant (nur

nach Aufforderung)

Bewilligung: 29.11.2020

Laufzeit: 4 Jahre

Projekt-Website: https://clinaid-lab.com/

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.

Projektbeteiligte

Prof. Dr. Eva Lermer
Universität München
Department für Psychologie
LMU Center for Leadership and People Management
München

Dr. Marzyeh Ghassemi
MIT Massachusetts Institute
of Technology
Institute for Medical Engineering & Science
Cambridge
USA

Priv. Doz. Dr. Ingo Einspieler
Universitätsklinikum Regensburg
Leiter Onkologische Bildgebung
Leiter Zentrum für Radiologisch-Interventionelle
Onkologie (RIO)
Regensburg

Prof. Dr. Errol Colak
University of Toronto
Department of Medical Imaging
St Michael's Hospital
Toronto
Kanada (Canada)

Open Access-Publikationen

Non-task expert physicians benefit from correct explainable AI advice when reviewing X rays
Attitudes toward the adoption of 2 AI-enabled mental health tools among prospective psychotherapists: A cross-sectional study.
Advancing mental health care with AI-enabled precision psychiatry tools: A patent review. (accepted)
Insights on the current state and future outlook of artificial intelligence in healthcare from expert interviews. (accepted)
The relationship between health IT characteristics and organisational variables among German healthcare workers.

Es werden die Institutionen genannt, an denen das Vorhaben durchgeführt wurde, und nicht die aktuelle Adresse.

22.04.2024

2