Common Ground Theory and Method Development Workshop: Exploring, Understanding, and Enhancing Human-Centricity in Hybrid Work Settings

Call for Abstracts: Half-day Workshop June 13, 2022

Purpose of the workshop

Many disciplines contribute to work settings with hybrid intelligence. The range is from information systems, machine learning, engineering and robotics, medicine up to work science, psychology, sociology, philosophy, business studies, law and labor relations just to mention the core disciplines involved. These disciplines refer to different basic understandings of what human-centered AI exactly means. These understandings are not necessarily routed in explicit theories but result from *theories in use* leading to a set of methods and instruments applied in R&D projects and transferred to practice. At the same time AI at work is still a subject challenging the societal and scientific discourse. Descriptions include dystopia such as the substitution of labor by superior machines having the edge over human beings on the one hand as well as descriptions of augmented work settings with empowered human beings making use of AI on the other hand. These perspectives co-exist and anyone goes over the other by definition. However, they are related to norms and standards in the workplace up to initiatives for legal regulations. Therefore, it is obvious that there is a need to further specify and systemize what human-centered AI in the workplace exactly means and what are the underlying criteria. These criteria can be deduced from theoretical concepts, from the analysis of instruments in use or from observations of daily practices in the workplace. All ways allow to understand the normative basis and while bringing them together to systemize how different perspectives complement or confront each other. The three way explorative approach also allows to address different use fields, institutional properties, legal context factors and to face different units of analysis in terms of job profiles, role concepts in the human-human or human-AI interaction, occupational identity, questions of trustworthy and explainable AI etc.

The aim of the workshop is to identify a common ground for human-centricity in hybrid work settings from the perspective of those disciplines and research communities which are involved in specific job design with hybrid intelligence. The common ground workshop invites

(1) theoretical outlines giving emphasis to concepts for specifying the normative basis of human-centered hybrid intelligence at work as it occurs in a specific discipline

(2) methods, instruments, and standards in terms of *theories in use* of what human-centricity means

(3) case study descriptions representing ways of implementing work settings with hybrid-intelligence and sharing experiences from practice.

Description of the half-day workshop format (for approx. 30 participants)

The workshop concept can be transferred from the real space to the virtual space if necessary. It integrates some traditional elements such as poster presentation but also follows an open and interactive format. The format aims to give access to the basic understanding from other disciplines in order identify and further elaborate on a common ground and to practice this as interactive as possible.

Opening (20 min)
The four PIs of the organizing committee start with spotlights from their research in order to inspire the further common ground activities (max. 5 min each).

Three round poster presentation (90 min):
Round 1 - theory outlines (30 min): Presenters with a theory poster. Participants visiting the posters follow an individual pathway (free tour). The concept allows small group discussions and network building.

Round 2 - Methods, instruments, and standards as *theories in use* (30 min): Presenters with posters for presenting specific methods. Participation as in round 1.

Round 3 - Use cases from field work (30 min): Presenters with posters from different use fields. The involvement of practitioners and the introduction of use cases in tandems from research and practice is highly appreciated. Participation as in round 1 and 2.

Break (20 min)

Fishbowl discussion on common ground (60 min)
Three presenters (one of each poster session) define the starting point for elaborating of a common ground. Two chairs of the fishbowl setting are free for alternative openings. Other presenters and workshop participants join in or change places following a fishbowl discussion. Two moderators visualize the outcome and frame the pillars of a common ground.

Agreement (30 min)
The participants agree on further activities for integrating their perspectives, e.g. special issue on their common ground discussion.

Call for abstracts for poster presentations

The organizing committee invites researchers and practitioners to submit an abstract with 500 words maximum (without references) including the title, aim, content and outcome that will be transferred to a final poster presentation. Abstracts should also include the names, affiliations, contact data and disciplinary background of the submission team. The abstract submissions should refer to one of the three lines described above (1) theoretical outlines of human-centered hybrid-intelligent work settings, (2) methods, instruments, and standards as *theories in use*, (3) use cases describing human-centered AI in the workplace – submissions from tandems of researchers and practitioners are highly appreciated in this third line.

Important deadlines:

April 1, 2022:   deadline for abstract submission for poster presentations in the workshop
April 29, 2022:   notification about submission acceptance
June 3, 2022:   upload of the final poster version on conference platform
June 13, 2022:   HHAI2022 Workshops

A template for an abstract and a poster will be available on March 15, 2022 latest. **Submissions of abstracts** should be made on: https://www.iaw.ruhr-uni-bochum.de/hhai-workshop-submission/

A workshop participation without poster is possible but should be announced until April 1, 2022 in order to support the overall workshop planning.

The organizing committee PIs:

Prof. Dr. Uta Wilkens[1] (main contact), uta.wilkens@rub.de, Competence center: HUMAINE, Ruhr University Bochum, Universitätsstraße 150, 44801 Bochum, Germany, +49 (0)234 3227876 (Work Science, Management Studies, Organizational Behavior)

Prof. Dr. Annette Kluge[2], annette.kluge@rub.de, Ruhr University Bochum, Competence center: HUMAINE, Universitätsstraße 150, 44801 Bochum, Germany, +49 (0)234 3228607 (Organizational Psychology, Human Factors)

Prof. Dr.-Ing. Verena Nitsch[3], v.nitsch@iaw.rwth-aachen.de, Competence center: AKzentE4.0, RWTH Aachen University, Eilfschornsteinstr. 18, 52062 Aachen, Germany, +49 (0)241 8099440 (Work Science, Human Factors, Engineering Psychology)

Prof. Dr. Steffen Kinkel[4], steffen.kinkel@h-ka.de, Competence center: KARL, Karlsruhe University of Applied Sciences, Moltkestr. 30, 76133 Karlsruhe, Germany, +49 (0) 721 925-2915 (Innovation Research, Work Systems, Business Information Systems)

Short bio of PIs:

1) *Uta Wilkens is managing director of the Institute of Work Science at Ruhr-Universität Bochum and holder of the chair for Work, Human Resources and Leadership. She is Leading Spokesperson for the human-centered AI-network (HUMAINE), a competence center for the human-centered integration of AI in the workplace with emphasis on use cases in healthcare and industry (working with AI imaging). As Vice President of the Society for Work Science she holds a broad network in the German speaking community. She is also member of the International Advisory Board GRAIL, a global initiative for learning with AI. In 2018 she was Visiting Professor at ATLAS (Alliance for Technology, Learning and Society), University of Colorado. Her research focus is on human-centered AI in the workplace, competence management, socio-technical system design, change management, and the design and implementation of laboratory-based team trainings.*

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2) *Annette Kluge is leading the research in work, organizational and business psychology and holds the chair respectively and is collaborative partner in HUMAINE, addressing the questions of how Human-AI collaboration at work can be designed in a way that motivational aspects of job identity, wellbeing and attentional resources do not decrease due to the new work constellation. She is leading the DFG Priority Program in Intentional Forgetting in organizations - a interdisciplinary research group with experts from computer science, information systems, psychology, and AI. She is currently developing a theoretical framework on Human AI Teaming in dynamically changing task affordance together with colleagues from information systems. Her research addresses the "dynamics" of human robot task allocation, temporal adaption of locally dispersed team and investigates the impact of Mixed Reality application for team work in High Reliability Organizations.*

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3) *Verena Nitsch is Director of the Institute of Industrial Engineering and Ergonomics at RWTH Aachen University and Head of the Department of Product and Process Ergonomics at the Fraunhofer Institute of Communication, Information Processing and Ergonomics FKIE. She is the leading spokesperson for the Work Science Competence Center for Gainful Employment in Industry 4.0 (AKzentE4.0) and Principal Investigator in the Cluster of Exellence Internet of Prodcution (IoP). Amongst other activities, she is a reviewer and advisor in numerous committees and advisory boards and a mentor of the EXIST Start-up Center. Her research interests include human-centered work design and human-machine interaction within highly automated socio-technical systems.*

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4) *Steffen Kinkel is Professor in Computer Science and Business Information Systems at Karlsruhe University of Applied Sciences. He is founder of the Institute for Learning and Innovation in Networks (ILIN) and leading spokesperson of the competence center "Artificial Intelligence for Work and Learning Systems in the Karlsruhe Region" (KARL), which aims to design human-centered, transparent, and learning-friendly AI-supported work and learning systems with high augmentation potential, to test them for practical applications. From 2004 to 2012 Steffen was Head of the Competence Centre „Industrial and Service Innovations" at the Fraunhofer Institute for Systems and Innovation Research*

ISI. His research areas are human-centric applications of innovative technologies (AI; Industry 4.0) at the workplace, competence development for the digital economy, smart business models, production and innovation networks, and global and local value chains.
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Further PIs involved in workshop planning and taking responsibility

Dr. Christian Zinke-Wehlmann, Applied Informatics and AI, and scientific and industrial members of the competence center K-M-I

Prof. Dr. Roman Dumitrescu, University Paderborn, and partners of the competence center KIAM/Arbeitswelt.Plus

Prof. Dr. Manfred Wannöffel, Ruhr University Bochum, Director of the Center of Cooperation RUB/IG Metall, associated with the European Legislative Initiative Democracy at Work, member of the competence center HUMAINE

Prof. Dr. Thomas Haipeter, University Duisburg-Essen, Head of the Research Unit 'Working Time and Work Organisation' at the Institute Work, Skills and Training, associated with the European Legislative Initiative Democracy at Work, member of the competence center HUMAINE

Further members from the competence centers listed in table 1.

Table 1. Competence centers for socio-technical job development with emphasis on AI represented in the workshop.

Competence center	Main objective and focus
AKzentE4.0	Development of a mixed-reality model factory to explore Industry 4.0 technologies in production for operational work design and make them tangible for companies.
HUMAINE	Human-centered AI development, implementation, and use in the workplace. Provides certified work role development trainings and supports regional development in the Ruhr area.
KARL	Learning-friendly and human-centered AI-supported work and learning systems in the application domains mobility and autonomous driving, knowledge-intensive services and ICT systems, manufacturing, and education.
KIAM /Arbeitswelt.Plus	Approaches for workplace design and employee qualification in the introduction of artificial intelligence in the working world in industrial SMEs.
K-M-I	Framework development with methods and tools for the design of artificially and human intelligent systems in industry, based on AI-RDY Assessment & Backing and AI-GO Roadmap.

References from members of the organizing committee or inspirational sources for the workshop concept

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