Cooperative Intelligence: Human-Artificial Intelligence at Work

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Abstract. This workshop investigates the developing notion of cooperative intelligence—the collaborative capability arising from human-AI interaction within working environments. Based on inter-disciplinary insights from CSCW (Computer-Supported Cooperative Work), HCI (Human Computer Interaction), and research on human-AI systems, it looks to engage with how AI (Artificial Intelligence) systems adapt cooperatively with humans, redefine work roles, affect team dynamics, communication, well-being, and identity. Foremost, studies have identified opportunities for mutually-beneficial decision-making as well as risks such as exclusion and ethical uncertainty. The increasing prominence of generative AI complicates the situation, rewriting white-collar work while generating new manager responsibilities. The workshop aims to investigate such dynamics, more notably regulation, power, and responsibility, and opens up for an array of submissions—from empirical case studies, through theory- and design-led ones. Through sharing of knowledge through collaborative activities, the workshop encourages cross-disciplinary and discursive dialogue, as well as the identification of pathways for incorporating AI into work practices that are both transparent, human-centred, as well as inclusive.

Proposal

Recent studies of cooperative intelligence—the problem-solving and decision-making abilities that arise from human-AI or multi-agent systems—have highlighted its interdisciplinary underpinnings, ranging from computer science and cognitive science to HCI and CSCW. At its heart, cooperative intelligence concerns autonomous agents (humans and AI systems alike) coordinating action, sharing aims, and negotiating tasks in dynamic settings. In the CSCW and HCI fields, researchers explored how AI systems become "teammates" that extend but do not substitute for human cognition. Jarrahi (2018) proposed the notion of human–AI symbiosis in firm-level decision-making and argued that cooperative intelligence depends on complementary strengths: judgment and contextual knowledge are more substantial in human actors, whereas speed and scale are strengths of AI systems in quantitative analysis. Amershi et al. (2019) also laid out principles to be followed in developing collaborative AI that can improve how they align with human intention over time. These need to be transparent, trustworthy, and shareable controls.

One of the emerging trends in the latest research is the movement away from "human-in-the-loop" systems toward co-adaptive systems, in which human and AI agents coevolve through engagement (Seeber et al., 2020). This coevolution requires new interfaces, norms, and artifacts to facilitate effective knowledge sharing and conflict resolution. In addition, speculative and critical design practices such as those by Forlano and Halpern (2023) have problematized cooperative intelligence's ethical and political dimensions, calling for just and equitable futures. While remarkable progress has been made, open challenges persist: designing for mutual comprehension in cross-functional teams, aligning autonomy and oversight, and considering power relations in algorithmic partnership. As authors continue, the community focuses more on participatory and reflexive practices to frame cooperative intelligence in ways that align with human values and aims. Jarota reflects upon the implications of AI in work environments with a focus on occupational health and safety (2023). The author contends that existing and envisioned EU laws concerning AI do not appropriately capture emerging and important hazards posed by AI-related systems in work, notably psychosocial and physical hazards. There are still open questions, like how to define and allocate responsibility for AI-related workplace injuries in clear and effective terms, particularly in regard to autonomous AI behavior. The paper also urges greater ethical and legal consideration of whether to treat AI as an independent legal actor or continue to treat it merely as a tool with humans in charge.

Law and Varanasi systematically examine how generative AI (GenAI) applications, such as ChatGPT and Midjourney, have changed white-collar work for different professions (2025). The overall conclusion is that practitioners often outsource repetitive as well as intricate creative work to GenAI, thereby transforming their jobs to involve more core strategic work. The delegation, however, has created new "AI managerial labor" in terms of extra work to supervise, rectify, and fine-tune GenAI results. Additionally, GenAI use has altered collaboration habits, at times substituting human interactions with partial

automation, causing disjointed work processes, fuzzy role boundaries, and professional identity and responsibility conflicts. Deanty and Corbin outline contrary scenarios—dramatically negative expectations for massive replacement of jobs and growing inequity, as opposed to hopeful projections of improved productivity through AI, the creation of new jobs, and working conditions (2024).

Dafoe et al. (2020) suggested a more expansive research agenda, which codified Cooperative AI as an independent agenda that encompasses the problem of designing AI agents that can solve coordination problems in both human and machine settings. Dafoe et al. specified central cooperative capabilities: the capacity to understand, communicate, be committed, and establish institutions. The paper emphasizes that most AI research centers on adversary or zero-sum settings. However, in the world, most applications are found in environments of mixed motives or shared interest in which one can cooperate and benefit. Dafoe et al. identify, however, as potential downsides to the achievement of such cooperative capabilities: exclusion, collusion, and coercion, indicating the importance of ethical and institutional protections. Therefore, cooperative intelligence is as much a technical problem as an interdisciplinary frontier that intersects with political science, cognitive psychology, and economics to create a just and collaborative world.

The above-mentioned complexity of the intertwining between algorithms and human practices in work settings results in several questions in the scope of CSCW and HCI research, especially when seen and discussed from different disciplines, as well as in different work sectors, like

- How practitioner-led work has been or is being transformed by AI;
- How and which regulations on AI can help workers to secure their jobs and raise their voice in work arrangements;
- What the impact of AI is on power relations, communication, teamwork, and work practices in general;
- What workers' attitudes to AI and other emerging technologies are;
- How these intelligent technologies impact the well-being of workers;
- How the ethical issues are mapped after having AI as an integral part of the work;
- How workers deal with failures caused by AI in their work domain, especially in critical situations;
- How the responsibilities are distributed among humans and AI, etc.

Workshop Goals

This workshop aims to bring together people working with AI in work environments, cooperation and coordination issues at work, and systems design related to CSCW to discuss the above-mentioned open questions and more. Learning from different approaches, perspectives, and current developments is the goal. We aim to provide a forum for participants, populated by researchers and practitioners with different perspectives, to share their experiences with processes connected to cooperative work activities supported or replaced by automation or

AI tools. It should act as a seed for further exchange of ideas and cross-community fertilization.

We focus on reflecting on key issues based on CSCW, HCI, and AI concepts and approaches regarding understanding, modeling, discussing, and re-arranging work practices in a more integrated way, by considering and applying work-related non-human intelligence in a meaningful way, but still putting humans at the center of attention. To this aim, we are looking for contributions that:

- Survey relevant developments in the area and thus contribute to the understanding of the identified challenges from multiple perspectives, especially on a conceptual level.
- Describe original empirical or theoretical work that sheds light on the workshop topic.
- Discuss similarities and differences in theoretical and methodological approaches in this research area.

We welcome participants willing to share their:

- Experiences of meeting a rigid work environment not susceptible to creative solutions.
- Investigations on AI used work environments, change, and innovation in these.
- Success or failure stories of how to creatively transform a work environment.
- Case studies and best practices for new work practice arrangements.
- Approaches to work, including AI-supported processes.
- Theoretical constructs to understand human-AI work practices.

Three additional aims supplement this primary goal. By bringing the workshop participants together, we hope that cross-fertilization will ensue among their cases, concepts, and questions. Second, we will collaboratively reflect on what CSCW, HCI, and AI approaches contribute to the study of cooperative intelligence in workspace processes, by applying Design Thinking methodologies and how we, as individuals and a community, can facilitate the transfer of these contributions to practitioners. Third, we will discuss the interest in further collaboration and networking initiatives regarding the further development and implementation of cooperative intelligence in work environments by emphasizing the role of AI in work practices.

Activities

The workshop is structured as a full-day event. It will consist of diverse activities, with an emphasis on in-depth conversations and community building:

1. Introduction. The organizers will open the workshop by introducing the agenda and goals for the day. They then facilitate a round of meet-and-greet activities, giving each participant a moment to introduce themselves and their interest in the topic using ice-breaking activities.

2. Panel discussions. The participants will be organized into thematic panels based on their position papers. Everyone will give a 6-minute presentation, followed by a collective discussion. The organizers will take shared notes to generate material to be worked on collaboratively.

3. Break-Out Groups. Participants will split into groups of 3-4 people to further explore shared interests through discussions to refine relevant themes and identify common challenges at the theoretical and methodological levels. For this activity, groups will be encouraged to focus their conversation on methodological issues. The goal is to identify key ideas and questions for discussion.

4. Summarizing. In this session, participants will be given a moment to review the collective notes taken during the day and to note down key insights and reflections. We will then go around the room to listen and respond to each other's thoughts.

5. Next Steps and Closing. The workshop will conclude with a shorter discussion around possible next steps to advance the use of AI in work, cooperative intelligence in the workspace, and related research, and it will also consider opportunities for further collaboration.

The organizers will proactively ensure that the workshop is interactive and has clear outcomes.

Participants

The workshop can accommodate a maximum of 20 participants (including the organizers). This would ensure a highly interactive event with time for discussion and the sharing of multiple perspectives. Participants will be recruited from the CSCW, CHI, PD, and AI research communities. In addition to the general dissemination provided by ECSCW 2025, the organizers will reach out to these communities through their extended research networks and by circulating a call for participation on relevant mailing lists, such as EUSSET, CSCW, CHI, and through social media. Detailed information about the workshop will be made available on our workshop website.

Participation in the workshop requires the submission of a position paper. We encourage potential participants to explain their interest in the workshop and particularly welcome position papers that address one (or more) of the workshop themes outlined above. We encourage all participants to state their positions and list 2-3 questions they want to discuss in the workshop at the end of the position paper. Position papers are limited to two pages (excluding references) in the ECSCW paper format, available in Latex (Overleaf template), RTF, or MS Word format. The position paper shall be submitted in PDF format to hilda.tellioglu@tuwie.ac.at.

The submitted position papers will be reviewed by the organizers and accepted based on the relevance and development of their content. Suppose the number of people interested in attending the workshop exceeds its capacity. In that case, the

organizers will prioritize submissions for rich presentations and discussions while seeking diversity among the participants. We expressly encourage both junior and senior researchers to submit position papers. To promote broader participation, particularly from practitioners of different communities, we also offer the option of submitting alternative material of rough equivalence to a position paper (e.g., an experience report, an illustrating artifact, or an abridged implementation plan). The workshop is intended to bring together participants for a full day.

Organizers

The workshop is organized by several senior researchers who have investigated work arrangements and practices by focusing on CSCW and HCI notions and theories for decades, and are currently involved in research in these fields by considering the digital transformation and AI use in work environments.

Hilda Tellioglu is an associate professor and head of the Artifact-based Computing & User (ACUR) Research Unit at the TU Wien, the Faculty of Informatics, chair of EUSSET, and scientific director of the Center for Technology and Society of the TU Wien. Her research focus covers the design and development of artifacts and their involvement in different settings, like homes, work, or public spaces, design thinking, co-design, user-centered design, digital transformation, and the use of AI tools in work settings. More at https://hildatellioglu.com

Markus Rohde is one of the founders of the International Institute for Socio-Informatics (IISI) and co-editor of the International Report on Socio-Informatics (IRSI). Since 2004, he has been working as a research associate at the Institute for Information Systems and New Media at the University of Siegen, since 2008 as research manager for Community Informatics. His main research interests are human-computer interaction, computer-supported cooperative work (CSCW), expertise management and blended learning, virtual organizations, non-governmental organizations, and (new) social movements. More at https://www.wineme.uni-siegen.de/en/team/rohde/

Additional Equipment

The workshop only requires standard equipment. In addition to a room with Wi-Fi and a projector, we will merely need flipchart-size paper, markers, pens, and Post-it notes.

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