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Cover Letter for Discussion Leader

Research Methods (CSE-60876)

Paper: [Let's Think Together! Assessing Shared Mental Models, Performance, and Trust in Human-Agent Teams](#)

General Topic: The paper primarily investigates the development and impact of team cognition on performance and trust within different compositions of human-agent teams (HATs).

Specific Behavior or Activity Studied: The paper evaluates how different team compositions in HATs (Human-Human-Human, Human-Human-Agent, Human-Agent-Agent) impact the development of team cognition, performance, and trust dynamics using the NeoCITIES simulation for an emergency response scenario.

Specific Research Questions:

- RQ1: How is the development of team cognition in human-agent teams similar or different from its development in human-human teams?

- RQ2: How does team composition affect the development and outcomes of team cognition in HATs?

  - RQ2.1: In regard to perceived team cognition?

  - RQ2.2: In regard to team performance?

  - RQ2.3: In regard to trust?

Challenges: The research navigates the complexity of blending human and AI behaviors in a team setting and understanding how this integration affects team performance, trust, and cognitive processes.

Paradigm: The study operates within the interdisciplinary paradigm of Computer-Supported Cooperative Work (CSCW) and Human-Computer Interaction (HCI), blending insights from psychology, computer science, and organizational studies to understand how technology influences team collaboration and interaction.

Problem: The study aims to address the gap in understanding how the integration of AI agents in human teams affects team cognition, performance, and trust – areas not extensively explored in current research.

Importance: This research is crucial for improving the integration and effectiveness of AI in team-based environments, given the increasing prevalence of AI in various sectors.

Claims: The paper posits that team composition significantly affects team cognition and performance. It asserts that the presence of AI agents in teams alters the dynamics of trust and team understanding.

State of Knowledge: the paper reflects insights and understandings in the field of human-agent teams (HATs), particularly focusing on team cognition, performance, and trust dynamics. The paper fills in a gap in existing research, which mostly looked at teams of just humans. It blends ideas from different areas like psychology and computer science to show new ways of thinking about teams with AI. This study is a step forward in understanding how AI can be part of human teams and opens up new paths for research in this area.

Evidence: The paper provides evidence through quantitative data from the NeoCITIES simulation, including performance measures and statistical analysis, alongside qualitative data from participant surveys.

Story Structure: The paper starts by outlining the problem and its significance, presents the research methodology and findings, discusses the implications of these findings, and concludes with potential future research directions.