Review of: "Collaborative Intelligence: A scoping review of current applications"

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Potential competing interests: No potential competing interests to declare.

The manuscript titled "Collaborative Intelligence: A scoping review of current applications" provides a well-written and rigorous overview of the state of the art in collaborative intelligence (CI). The authors consider a human-in-the-loop interpretation of CI, emphasizing the interaction between human and AI agents to achieve shared goals. They propose three clear criteria for considering an application as CI: complementarity, shared objective, and sustained interaction. The three criteria provided offer a practical framework for classifying CI applications.

However, a limitation of the paper is the absence of discussion regarding Generative AI (GenAI) applications that fulfill the defined CI criteria. Despite the authors acknowledging the scope limitation up to 2021, just short of the GenAI breakthrough, the underlying technologies (e.g., transformer architectures like BERT or GPT, GANs, Reinforcement Learning) have been in existence for several years before that timeframe. GenAI applications (some launched by the end of 2021), such as Midjourney, ChatGPT, and Firefly, enable humans and AI agents to collaborate in novel ways, enhancing task efficiency, content generation creativity, and decision-making capabilities. The omission of GenAI applications from the review prevents a comprehensive overview of the current landscape in CI, which is a notable oversight for a manuscript encompassing the words "current applications" in its title, and that was intended for publication in May 2023.

I strongly urge the authors to revise the manuscript and include a discussion on GenAI applications. This inclusion would enrich the manuscript by presenting a more complete and up-to-date state-of-the-art of CI. Moreover, it would demonstrate how GenAI can facilitate new and innovative forms of collaboration between humans and AI. By incorporating GenAI applications in the review, novel scenarios of collaborative intelligence, such as collective-collaborative intelligence, can be explored. These scenarios involve virtual collaboration among human+AI agents to generate content that can be shared and remixed by a larger community of human+AI agents through online channels. Noteworthy platforms like Replit, incorporating Ghostwriter for code generation, exemplify this collective-collaborative intelligence approach by enabling community sharing of collaborative intelligence projects.

Furthermore, in the conclusion, the authors assert that "AI necessitates advanced capabilities such as modeling the human perspective and engaging in dialogue with human collaborators. The latest advancements in AI are actively developing these capabilities." It is noteworthy that these capabilities may already be surfacing. Some argue that language models such as GPT, Llama, and Falcon have already demonstrated proficiency in these areas. For instance, GPT has showcased its capacity to generate text indistinguishable from human-written content and engage in natural

conversations with humans, as supported by its ChatGPT GUI.

In conclusion, while I appreciate the authors' rigorous approach and well-written manuscript, the omission of GenAI applications limits the exploration of current collaborative intelligence applications. Addressing this limitation will enable the authors to make a more impactful and valuable contribution to the academic community. It is worth noting that some of the applications reviewed by the authors, including StoryDrawer, Shelley, Calliope, Cobbie, and Wordcraft, may indeed fall under the category of GenAI. Consequently, expanding the review in this direction would be advantageous in order to enhance the breadth and depth of the manuscript's survey.

I hope that the authors will carefully consider my feedback and incorporate it into their revisions of the paper. Until the necessary revisions are made, I regretfully cannot recommend the manuscript for publication.

Minor comment: In Figure 1, the horizontal blue arrows denoting document exclusion should originate from the previous vertical down arrays, rather than from the boxes of the current stage.