

Multi-Agent Systems for Information Systems Research

Provocations for AI-Augmented Scholarship

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The Information Systems (IS) community faces a growing paradox. Scholarship is increasingly demanding interdisciplinarity, systematic literature integration, and methodological rigor (Abbasi et al. 2024). However, individual researchers confront finite cognitive and temporal resources. This TREO Talk introduces MAS4ISR (Multi-Agent Systems for Information Systems Research) as a conceptual and computational framework for exploring how collaborative AI agents might augment scholarly inquiry.

MAS4ISR extends beyond existing multi-agent toolkits by delivering concrete capabilities for IS research. Large Language Models (LLMs) have already been shown to be highly effective for advanced text analytics in IS research (Ampel et al. 2025). Building on this foundation, MAS4ISR embeds organizational theory into its architecture to enable agents that search literature, extract insights, and synthesize proposals. A computational transactive memory system ($TMS = (M, D, R)$) dynamically allocates and updates expertise across agents, allowing them to specialize while still drawing on shared knowledge. Sequential coordination protocols ensure outputs flow logically across stages, while consensus mechanisms validate citations, enforce academic standards, and reduce hallucinations. Together, these capabilities position MAS4ISR as a collaborative, theory-driven research partner, supporting IS scholars from idea generation to early proposal development.

We seek conversation around key open questions. First, can we design multi-agent systems whose inner workings are not black boxes but transparent, auditable, and grounded in IS theory? Second, what if such systems became shared laboratories for IS researchers, democratizing access for junior faculty, emerging economies, and cross-disciplinary teams? Third, how should we evaluate AI-augmented research ideas? What is the value of these ideas? Should agents be acknowledged as transparent contributors? Who bears responsibility for hallucinations or errors?

This TREO aims to invite debate on how theoretically grounded AI agents might reshape IS scholarship, co-author relationships, and the very criteria by which we judge research quality. By integrating organizational theory into AI design while also questioning authorship, accountability, and community practice, MAS4ISR offers a fertile testbed for rethinking the future of IS inquiry.

References

- Abbasi, Ahmed, Jeffrey Parsons, Gautam Pant, Olivia R. Liu Sheng, and Suprateek Sarker. 2024. "Pathways for Design Research on Artificial Intelligence." *Information Systems Research*, May. <https://doi.org/10.1287/isre.2024.editorial.v35.n2>.
- Ampel, B., Chi-Heng Yang, James Hu, and Hsinchun Chen. 2025. "Large Language Models for Conducting Advanced Text Analytics Information Systems Research." *ACM Transactions on Management Information Systems* 16 (1): 1–26.