Software and Systems Modeling (2026) 25:959–960
https://doi.org/10.1007/s10270-026-01418-1

EDITORIAL

Generative AI in the software and systems modeling journal: accountability first, tools second

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Published online: 10 August 2026

This editorial note is addressed to the editors, reviewers, and authors involved in *Software and Systems Modeling*.

The rapid emergence of generative artificial intelligence (AI), particularly large language models (LLMs) and AI agents, is transforming both our research agendas and our daily scientific practices. For the software and systems modeling community, these technologies occupy a unique position. On the one hand, they are becoming important objects of study, whether in the context of AI for software engineering or software engineering for AI. A particularly interesting question is how modeling is affected when AI agents are used in development, for example, whether such agents should explain their reasoning by creating abstract, explicitly accessible models as intermediate results.

On the other hand, AI agents are increasingly used as tools supporting research, writing, reviewing, and editorial activities. As researchers, we see every day how these technologies can improve productivity and communication. Generative AI tools can help authors refine the presentation of scientific ideas, improve readability, identify inconsistencies, summarize related work, or suggest alternative formulations. AI agents may also participate more directly in the research process itself. Similarly, reviewers and editors may use such tools to improve the clarity and structure of their assessments and recommendations. Used responsibly, these technologies can reduce barriers to communication and allow researchers to focus more attention on the scientific substance of their work.

In this context, *Software and Systems Modeling* adopts a pragmatic position regarding the use of generative AI tools in the preparation of manuscripts, reviews, and editorial recommendations.

In line with the pragmatic use of AI agents in software development, where developers remain responsible for the code they produce, and in the spirit of recent discussions within the scientific publishing community and evolving policies of organizations such as ACM, we consider the use of such tools to be *acceptable* when they are used as writing and communication aids, provided that privacy and confidentiality are respected. We do not require an explicit disclosure of such use. Authors are, of course, free to mention which tools they used if they wish to do so.

The rationale behind this position is straightforward. Throughout the history of scientific publishing, researchers have continuously adopted new tools to support their work and automate tasks where possible: word processors, layout and rendering systems, spell checkers, grammar assistants, reference managers, statistical software, modeling environments, and code-generation tools. Through this lens, generative AI can be viewed as the latest addition to this evolving toolbox. The central question for a scientific journal is therefore not whether a particular tool was used, but whether the resulting scientific content meets the standards of quality, novelty, rigor, and contribution to the state of the art, and whether the reviewing process preserves privacy and confidentiality.

Consequently, SoSyM places its emphasis on *accountability* rather than *tool usage.* Authorship is fundamentally associated with identifiable human beings who take responsibility for the work and its content. AI systems themselves cannot be considered authors. Whatever tools authors use, they remain fully responsible for every statement, result, figure, model, reference, and conclusion appearing in their manuscripts. This includes the responsibility to ensure that

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no hallucinated claims, fabricated references, or misleading statements are included. If such errors are discovered after publication, authors remain responsible for correcting them through the journal's established correction mechanisms. In cases of misconduct involving the use of generative AI, the journal reserves the right to consider further measures consistent with its policies and scholarly norms.

At SoSyM, we extend this accountability principle beyond authors. Reviewers are responsible not only for the content of their reviews and recommendations, but also for preserving the confidentiality of the reviewing process. Editors remain responsible for their editorial decisions and communications. The use of AI assistance does not transfer responsibility to the technology. Accountability remains entirely human.

This principle is particularly important because generative AI systems are known to produce convincing but incorrect information, fabricated references, flawed reasoning, or misleading explanations. The responsibility for identifying and correcting such issues lies with the humans who choose to use these tools. A manuscript containing inaccurate claims or hallucinated references is not excused because an AI system generated them. Likewise, a superficial review is not justified because an AI assistant helped draft it. The standards of scientific quality remain unchanged, regardless of the tools involved. The community evaluates the content, and accountable humans stand behind that content.

A further responsibility associated with the use of generative AI concerns confidentiality. Reviewers and editors must ensure that any use of AI-assisted tools does not compromise the confidentiality of submitted manuscripts or the integrity of the review process. Manuscripts under review, reviewer reports, editorial discussions, and unpublished research results often contain confidential information entrusted to the journal and its participants. Consequently, any use of AI assistance must be consistent with preserving this confidentiality and with the terms and conditions governing the tools being used. Individuals remain responsible for ensuring that unpublished material is not disclosed, stored, reused, or otherwise made accessible to third parties without appropriate authorization. The adoption of AI tools must never come at the expense of the trust that underpins scholarly communication and peer review.

At the same time, we recognize that generative AI may further accelerate the production of scientific artifacts. The increasing ease with which manuscripts, reviews, and reports can be produced may contribute to an already growing pressure on the scholarly communication system. More submissions imply more editorial work, more reviews, and greater demands on the collective attention of our community. The challenge facing scientific publishing is therefore not only technological, but also organizational and cultural. As a community, we must continue to value scientific substance, novelty, rigor, and insight over sheer volume. The role of peer review and editorial oversight becomes even more critical in ensuring that increased productivity does not come at the expense of scientific quality.

It is also becoming increasingly clear that we are approaching a new frontier: AI agents are evolving from writing assistants into systems capable of performing increasingly autonomous tasks. One can already imagine scenarios in which agents generate papers, submit them, review manuscripts, and formulate recommendations with limited human intervention. Such a future raises fundamental questions about authorship, accountability, peer review, and scientific trust. The principles that underpin scholarly publishing today rely on the existence of accountable human participants. If authorship, reviewing, or editorial judgment were ever delegated to autonomous systems, then the foundations of scientific communication would need to be reconsidered. Questions of responsibility, transparency, incentives, governance, and legal liability would become central concerns rather than peripheral ones.

SoSyM remains committed to a simple principle: Scientific publications, reviews, and editorial decisions are human responsibilities. We welcome the responsible use of generative AI as a tool that can assist researchers, reviewers, and editors in carrying out these responsibilities. What ultimately matters is not which tools were used, but whether accountable humans stand behind the resulting scholarly contributions and whether those contributions advance knowledge with the rigor and integrity expected by our community.

The age of generative AI has already arrived. The age of autonomous scientific agents may be coming soon. As a leading journal in software and systems modeling, SoSyM will continue to engage with these developments both as a venue for scientific contributions and as an active participant in the broader conversation on the future of scholarly communication. We encourage our community not only to adapt to these transformations, but also to help understand and shape them through rigorous research, thoughtful debate, and responsible innovation.

We thank the members of the SoSyM editorial board who helped shape this text through thoughtful comments and discussion. In particular, we thank Steffen Zschaler, Timothy Lethbridge, Thomas Kühne, Lola Burgueño, Jordi Cabot, Antonio Cicchetti, Philippe Collet, Vinay Kulkarni, Leen Lambers, Dimitris Kolovos, and Matthias Tichy.