Call for Papers

IEEE Transactions on Computational Social Systems (TCSS)

Special Issue on Embodied and Brain-Inspired Intelligence for Computational Social Systems

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Background and Motivation

Computational social systems are evolving rapidly with the increasing integration of artificial intelligence, multimodal sensing, and large-scale digital infrastructures. These systems involve complex interactions among humans, intelligent agents, and dynamic environments, where behaviors are inherently uncertain, context-dependent, and continuously evolving.

Conventional approaches often assume static environments and rational agents, which limits their ability to model real-world social dynamics. In contrast, embodied intelligence and brain-inspired modeling introduce perception–action loops, adaptive cognition, and continuous environmental interaction, enabling more realistic and human-centric modeling of social systems.

At the same time, modern social systems are characterized by heterogeneous agents, multimodal information streams, and distributed decision-making processes. This creates new challenges in understanding collective behavior, trust, and coordination under uncertainty.

Scope and Contributions

This Special Issue aims to explore novel theories, models, and applications of embodied and brain-inspired intelligence in computational social systems. It focuses on advancing methodologies for modeling, interaction, and decision-making in complex, uncertain, and real-world environments.

The scope includes interdisciplinary contributions spanning artificial intelligence, cognitive modeling, and social computing, with an emphasis on human-centric and adaptive systems.

Topics of Interest

Topics include, but are not limited to:

- Embodied intelligence in computational social systems
- Brain-inspired modeling of social behavior and cognition
- Human–AI interaction and social intelligence
- Uncertainty-aware modeling and decision-making
- Multimodal social data fusion and analysis
- Collective behavior modeling and multi-agent systems
- Trustworthy, fair, and responsible social AI
- Adaptive and context-aware social systems
- Digital humans and embodied social agents
- Scalable and distributed architectures for social systems
- Applications in social media, smart cities, human–robot interaction, and virtual environments

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Timeliness and Relevance

The rapid deployment of intelligent systems in social environments, such as online platforms, smart cities, and human–AI collaborative systems, highlights the urgent need for adaptive and uncertainty-aware modeling approaches.

Embodied intelligence and brain-inspired methods remain underexplored in computational social systems despite their strong potential to model perception-driven interaction, adaptive reasoning, and multimodal intelligence.

This Special Issue provides a timely platform to bridge this gap and promote interdisciplinary research integrating AI, cognitive science, and social systems modeling.

Important Dates

- Manuscript submission deadline: **February 28, 2027**
- First review notification: **April 30, 2027**
- Revised manuscript submission: **June 15, 2027**
- Final decision notification: **August 15, 2027**
- Publication date: **Early 2028**

Submission Guidelines

Manuscripts should be submitted via the IEEE Author Portal:
https://ieee.atyponrex.com/journal/tcss

Please select the Special Issue:
"Embodied and Brain-Inspired Intelligence for Computational Social Systems"

All submissions will undergo a rigorous peer-review process following the standards of IEEE TCSS.

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