IEEE SMC Systems, Man, and Cybernetics Society
IEEE Transactions on Computational Social Systems
IEEE

CALL FOR PAPERS

Special Issue on "Multimodal Representation and Reasoning for Social Computing"

Theme: Social computing has witnessed a significant shift towards incorporating diverse sources of information, including text, images, audio, videos, and structured knowledge graphs. The abundance of multimodal data offers valuable insights and opportunities to understand and analyze social phenomena comprehensively. However, effectively leveraging these multiple modalities requires advanced techniques for representation and reasoning. Multimodal representation needs to encode information from various modalities into a unified framework, extracting meaningful features and capturing the inherent relationships and dependencies between different modalities. Machine reasoning further incorporates complex computations, including making inferences, drawing conclusions, and understanding the underlying logic within multimodal data. These two tasks go beyond simple data fusion and require higher-level cognitive processes to extract meaningful insights from the combined modalities. Effective reasoning techniques enable us to uncover hidden patterns, detect anomalies, predict user behaviors, and gain a deeper understanding of social phenomena. By advancing the field of multimodal representation and reasoning for social computing, researchers aim to enable more accurate, comprehensive, and interpretable analysis in cyber-physical-social spaces. Eventually, the output of studies in the above areas will have significant implications across various tasks and domains, including social network analysis, affective computing, recommendation systems, e-commerce, and digital health.

Motivated by these facts, this special issue aims to enhance multimodal representation and reasoning to profoundly impact the understanding, interaction, and utilization of the potential of digital social networks. The special issue has the following topics (but are not limited to):

- Representation techniques for multimodal learning
  - Semantic alignment among different modalities
  - Transfer learning and domain adaptation for multimodal representation
  - Cognitive-inspired multimodal representation
  - Multimodal fusion techniques
- Intelligence and interpretable reasoning methods for multimodal learning
  - Explainable multimodal learning models
  - Graph-based reasoning for multimodal learning
  - Interpretable models based on logical reasoning
  - Emerging technologies (e.g., large language models) in multimodal reasoning
- Multimodal intelligent tasks, such as affective computing
  - Multimodal intention and emotion recognition
  - Multimodal affective fusion, generation and interaction
  - Multimodal sentiment dataset and evaluation
  - Cross-cultural and cross-linguistic multimodal emotional computing
  - Applications of multimodal affective computing
- Multimodal applications in various fields, such as digital health
  - Fusion analysis of medical image data and text data
  - Multimodal medical data integration
  - Multimodal remote monitoring and health management
  - Multimodal assisted diagnosis and decision support
- Survey, fairness, accountability and ethics of multimodal computing

Important Dates
Paper Submission Deadline: July 30, 2024
First Review Completed: September 15, 2024
Revision Due: October 30, 2024
Final Decision: November 15, 2024
Publication Date: December 31, 2024

Guest Editors
Mengling Feng, National University of Singapore, Singapore
Erik Cambria, Nanyang Technological University, Singapore
Qika Lin, National University of Singapore, Singapore
(Corresponding Editor, Email: qikalin@foxmail.com)
Kaize Shi, University of Technology Sydney, Australia
Weiping Li, Peking University, China

Submission Guidelines
Authors should prepare their manuscripts according to the submission guidelines of the IEEE TCSS, and submitted through the IEEE Author Portal. Please select “Special Issue” of “Multimodal Representation and Reasoning for Social Computing” under the Manuscript Category of your submission.