



CALL FOR PAPERS FOR SPECIAL SESSION PROPOSAL

SPECIAL SESSION 1

Multimodal and Multimodel Artificial Intelligence: Foundations, Architectures, and Real-World Applications

Session description :

The next generation of artificial intelligence systems is increasingly defined by their ability to process, integrate, and reason across multiple data modalities. From text, images, audio, video, and time-series signals to structured and unstructured data streams, multimodal AI enables richer representations and more robust decision making capabilities. This special session, "Multimodal and Multimodel Artificial Intelligence: Foundations, Architectures, and Real-World Applications, organized in collaboration with IEEE Region 8 Women in Engineering, explores theoretical foundations, architectural innovations, and applied research in multimodal and multimodel AI systems. The session will investigate advanced fusion strategies, cross-modal alignment techniques, representation learning frameworks, and hybrid architectures that combine large language models (LLMs), vision transformers, graph neural networks, and time-series models. Beyond model design, the session will address interpretability, scalability, robustness, and efficiency challenges in multimodal systems. Emphasis will also be placed on trustworthy and inclusive AI, including fairness, explainability, privacy preserving learning, and regulatory considerations across industries. Beyond model design, the session will address interpretability, scalability, robustness, and efficiency challenges in multimodal systems. Emphasis will also be placed on trustworthy and inclusive AI, including fairness, explainability, privacy preserving learning, and regulatory considerations across industries. Participants will explore applications across diverse domains such as smart cities, autonomous systems, cybersecurity, education, finance, agriculture, industry 4.0, and digital transformation. Case studies will demonstrate how multimodal AI enhances perception, reasoning, automation, and human-AI collaboration. This session aims to empower women in AI and engineering, fostering interdisciplinary dialogue among researchers, engineers, industry leaders, and policymakers. By highlighting inclusive practices and promoting mentorship, the session seeks to advance scalable, transparent, and impactful multimodal intelligence systems while nurturing the next generation of women leaders in AI and engineering.

Session chairs :

- **Amal Jlassi**, Tunis El Manar Univ, Tunisia
- **Sami Hafsi**, Carthage Univ, Tunisia
- **Emna Amri**, CESI, France
- **Boudour Ammar**, Sfax Univ, Tunisia
- **Zeineb Fki**, Monastir Univ, Tunisia.

Topics of interest (not limited to) :

- Multimodal Representation Learning;
- Cross-Modal Alignment and Fusion Techniques;
- Hybrid Multimodel Architectures;
- Foundation Models for Multimodal Intelligence;
- Multimodal Reasoning and Decision-Making Systems;
- Explainable and Trustworthy Multimodal AI;
- Federated and Distributed Multimodal Learning;
- Real-Time Multimodal Streaming Analytics;
- Human-AI Interaction in Multimodal Systems;
- Edge AI and Efficient Multimodal Deployment;
- Multimodal AI for Autonomous Systems;
- Benchmarking and Evaluation of Multimodal Models;
- Generative Multimodal Systems (Text-to-Image, Image-to-Text, Audio-Visual Generation);
- Ethical and Regulatory Challenges in Multimodal AI;

Important Dates



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