3rd Workshop on DIStributed COLlective Intelligence (DISCOLI 2024)

co-located with

THE 20TH INTL. CONF. ON DISTRIBUTED COMPUTING IN SMART SYSTEMS AND IoT (DCOSS-IoT 2024)

Abu Dhabi, United Arab Emirates, April 29 – May 1, 2024

https://discoli-workshop.github.io/2024/

The 3rd DISCOLI workshop on DIStributed COLlective Intelligence is co-located with the 20th International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT 2024) that will take place in Abu Dhabi, United Arab Emirates, April 29 – May 1, 2024.

Workshop Chairs

- Gianluca Aguzzi *(Alma Mater Studiorum - Università di Bologna, Italy)*
- Lukas Esterle *(Aarhus University, Denmark)*
- Pietro Manzoni *(Universitat Politècnica de València, Spain)*
- Claudio Savaglio *(Università della Calabria, Italy)*

Important Dates

- *Submission deadline*:Jan. 15th, 2024
- *Notification*: March 8th, 2024
- *Camera-ready submission*: March 29th, 2024
- *Workshop date*: April 29-May 1, 2024-TBD

Kinds of accepted submissions

- *Workshop papers*: provide original research contributions (must not exceed 6 pages including references; up to two additional pages may be purchased for CR).
- *Work-in-Progress (WIP) papers*: describe original work-in-progress research which may not have been fully validated (must not exceed 4 pages (including references).

Publication Details

All accepted and presented papers will be submitted to IEEE Xplore and **indexing** databases like Elsevier, IET, and Scopus. A **special issue** on an ISI-impacted journal will be organised and selected papers from DISCOLI will be invited to submit an extended contribution. More details at: **https://discoli-workshop.github.io/2024/**

Call for Papers

Recent technological and scientific trends are promoting a vision where intelligence is more and more distributed and collective. Indeed, as computing and communication technologies are becoming increasingly pervasive, and complexity of systems is growing in terms of scale, heterogeneity, and interaction, hence the focus tends to shift from the intelligence of individual devices or agents to the collective intelligence (CI) emerging from a dynamic collection of diverse devices. Such intelligence would allow systems to address complex problems through proper coordination (e.g., cooperation or competition), to self-organise to promote functionality under changing environments, and to improve decision-making capabilities.

The workshop aims to provide a forum where researchers and practitioners can share and discuss fundamental concepts, models, and techniques for studying and implementing collectively intelligent distributed systems. Accordingly, it welcomes original research work providing ideas and technical contributions for promoting scientific discussion and practical adoption of CI mechanisms in engineered systems. As such, the workshop also welcomes cross-disciplinary contributions (e.g., extracting computational mechanisms from natural systems exhibiting forms of CI) and contributions from related research areas like coordination (the study of interaction), multi-agent systems (MAS), socio-technical systems, organisational paradigms, security approaches, Wireless Sensor and Actuator Networks (WSANs), the Internet of Things (IoT), crowd computing, and swarm robotics.

The topics of interest include (but are not limited to) the following:

- Algorithms for self-adaptive/self-organizing system behaviour
- Algorithms of artificial collective intelligence (e.g., multi-agent reinforcement learning)
- Techniques for task-specific collective intelligence
- Extraction of collective knowledge in Internet of Things systems
- Collaborations of humans and artificial agents in socio-technical systems
- Formal models for computational collective intelligence
- Design and verification of emergent properties in distributed systems
- Coordination models and languages
- Programming languages for distributed CI systems
- Languages and tools for multi-tier, agent-based or macro-programming
- CI for distributed wearable computing systems
- Techniques for crowd computing systems and applications
- Applications of distributed CI for smart environments (e.g., smart cities, smart buildings, sensor systems, and the IoT)
- Security for smart systems