CALL FOR PAPERS - SPECIAL SESSION
"Decentralized control and decision-making: blockchain-empowered AI agents in cyber-physical systems"
for CODIT 2025
July 15-18, 2025 ▪ Split, Croatia

Session Co-Chairs:

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Session description: The integration of artificial Intelligence (AI) agents and multi-agent systems with Internet of Things (IoT) devices, empowered by blockchain technology, promises a transformative shift in how digital ecosystems operate. By coupling AI's decision-making and autonomous capabilities with the pervasive connectivity of IoT applications, these systems can operate more autonomously, intelligently, securely, and transparently. Blockchain enhances the development of trusted infrastructures where agents can safely interact, form contracts, exchange value and maintain verifiable transaction histories without relying on centralized intermediaries. Ensuring data integrity through blockchain's immutable and verifiable infrastructure further enhances the accuracy and reliability of AI-driven decisions in critical applications. In this context, cyber-physical systems (CPS) also play a crucial role as they connect the digital and physical worlds, enabling IoT devices equipped with AI agents to engage in complex, real-time operations in multiple domains.

This special session deals with the challenges of integrating blockchain technology and AI agents to enhance trust, security, and efficiency across various applications and domains with a specific focus on CPS. The goal is to foster discussion and collaboration among researchers and practitioners working at the intersection of blockchain, AI, and their applications.

The topics of interest include, but are not limited to:

- Decentralized AI-agent infrastructures for IoT/Industrial IoT
- Blockchain-based AI agents for secure and privacy-preserving Recommender Systems
- Interoperability and scalability challenges in blockchain-AI integration
- Hybrid Edge/Cloud architectures for real-time AI and blockchain operations

- Data integrity and explainability in AI agents via blockchain
- Novel architectures and applications of blockchain-enabled AI agents in Production management, Supply Chain, E-Commerce, Energy, Healthcare etc.
- Blockchain-assisted federated learning for industrial processes
- Emerging business models and marketplaces enabled by blockchain-based AI agents
- Cybersecurity and governance models for distributed AI-IoT ecosystems
- Cross-layer cybersecurity frameworks for CPS relying on blockchain-enabled AI agents
- Trust management and enhanced security for AI agents through blockchain smart contracts

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **February 07, 2025:** **http://controls.papercept.net/conferences/scripts/start.pl**. In PaperCept, click on the **CoDIT 2025 link "Submit a Contribution to CoDIT 2025" and follow the steps.**

IMPORTANT: All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

DEADLINES

February 07, 2025: deadline for paper submission

April 27, 2025: notification of acceptance/reject

May 17, 2025: deadline for final paper and registration