

Title: Intelligent Optimization for Resource Orchestration in Cloud, Edge, and IoT Computing: Recent Advances and Applications

Punit Gupta, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.

Rajan Prasad Tripathi, Americal University of Technology, Tashkent, Uzbekistan.

Abstract

The rapid growth of Cloud, Edge, Fog, and IoT computing has created significant challenges in resource allocation, task scheduling, workload distribution, and energy-efficient orchestration. Traditional optimization techniques often struggle with the dynamic, heterogeneous, and multi-objective nature of these environments. Recent advances in Artificial Intelligence, Reinforcement Learning, metaheuristic algorithms, and quantum-inspired optimization offer promising solutions for intelligent and adaptive resource management. This mini symposium aims to bring together researchers working on AI-driven and quantum-inspired optimization for resource orchestration in Cloud–Edge–Fog–IoT systems. Emphasis will be given to novel algorithms, hybrid optimization approaches, intelligent scheduling, resource allocation, computation offloading, and simulation-based evaluation.

Scope and Topics

The minisymposium will cover, but is not limited to:

- AI/ML and Reinforcement Learning for resource management
- Federated and distributed learning for resource management
- Explainable and trustworthy AI for autonomous orchestration
- Quantum-inspired optimization and hybrid metaheuristic algorithms
- Intelligent task scheduling and VM placement
- Resource allocation and dynamic provisioning
- Cloud–Edge–Fog–IoT resource orchestration
- Computation offloading and latency-aware optimization
- Energy-efficient and multi-objective optimization
- Swarm intelligence and evolutionary algorithms
- Simulation and Evaluation
- Autonomous and Intelligent computing systems

Submission: [MMCITRE 2026 • Call For Papers](#)