



12th International Symposium on Intelligent Distributed Computing

Bilbao, Spain, October 15th-17th, 2018

Organized by:

- Joint Research Lab (<http://jrllab.science>)
- Department of Communications Engineering University of the Basque Country (UPV-EHU), Bilbao, Spain

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Intelligent Distributed and High-Performance Architectures

- Hybrid distributed systems
- Intelligent grid and cloud infrastructures
- Agent-based wireless sensor networks
- Distributed frameworks and IoT middleware
- GPU, multicore, and many-core intelligent computing
- Intelligent high-performance architectures
- Context-aware intelligent computing
- Virtualization infrastructures for intelligent computing
- Bio-inspired and nature-inspired distributed computing

Organization and Management

- Autonomic and adaptive distributed computing
- Intelligent service composition and orchestration
- Self-organizing and adaptive distributed systems
- Emerging behaviors in complex distributed systems
- Intelligent integration of heterogeneous data and processes
- Methodologies for development of intelligent distributed systems

Ephemeral and Unreliable computing

- Theory and applications of complex ephemeral environments
- Design and deployment of ephemeral computing systems
- Application of Soft Computing methods on computational environments featuring ephemeral behavior
- Meta-heuristics for modeling and analyzing ephemeral properties, such as social network dynamics, ephemeral clustering and pattern mining, ephemeral computational creativity or content generation.

Intelligent Distributed Knowledge Representation and Processing

- Information extraction and retrieval in distributed environments
- Knowledge integration and fusion from distributed sources
- Data mining and knowledge discovery in distributed environments
- Semantic and knowledge grids
- Ontologies for describing heterogeneous resources and services
- Distributed fusion of sensor data streams
- Big Data Processing

Parallel meta-heuristics for distributed optimization

- Global single-population master-slave, panmictic population GAs
- Single-population fine-grained GAs
- Multiple-population, multiple-deme, distributed, island based GAs
- Parallel Variable Neighborhood Search
- Distributed Evolutionary Techniques, Cellular EA
- Hyper Heuristics
- Swarm intelligence for distributed/cooperative environments

Distributed swarm robotics systems

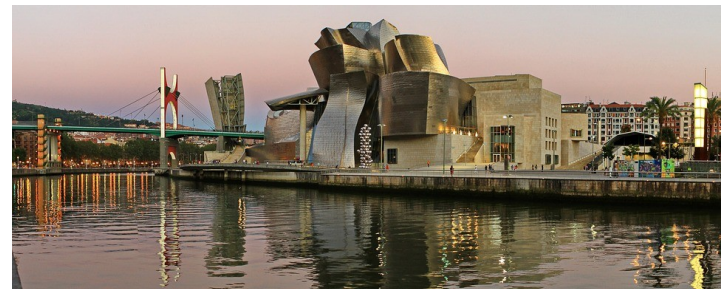
- Recent advances on Soft Computing methods for Robotics
- Novel applications of Swarm Robotics
- Coordination and control of Swarm Robotic Systems
- Applications of Swarm Intelligence for collaborative positioning and route optimization in robotic swarms
- Distributed inference in Swarm Robotics
- Self-organization in robotics enabled by Swarm Intelligence

Nature-inspired methods for supervised and unsupervised data mining

- Hybridizing bio-inspired methods with machine learning techniques
- Nature-inspired feature selection and/or instance generation
- Implementation of bio-inspired methods using Big Data technologies
- Federated learning: theory and applications

Intelligent Distributed Applications

- Distributed problem solving and decision making
- Intelligent applications in e-business/e-commerce, e-learning, e-health, e-science, e-government, crisis management, smart grids
- Modeling and simulation of intelligent distributed systems
- Simulation of groups and crowds



The main goal of the IDC series is to gather researchers and practitioners to foster and ease rich discussions around the latest findings, research achievements and ideas in the area of Intelligent Distributed Computing. IDC 2018 provides an open forum for enhancing the collaboration between researchers, lecturers, and students from Intelligent Computing and Distributed Computing communities. Intelligent Computing covers a hybrid palette of methods and techniques ranging from classical artificial intelligence, information sciences or computational intelligence to more recent trends such as swarm intelligence, bio-inspired computation, cloud computing or machine learning. Distributed Computing develops technologies and methods to build complex computational systems composed of collaborating software components spread over different computational elements. Recent trends on this field are Ephemeral Computing, Federated Learning or Swarm Robotics. Thus, the field of Intelligent Distributed Computing seeks for the design and implementation of new generation of intelligent distributed systems, adapting or hybridizing researches in both Intelligent Computing and Distributed Computing.

IDC 2018 welcomes research works centered on all above aspects of intelligent distributed computing, with an intention to balance between theoretical research ideas and their practicability as well as industrial applicability. To this end, scholars and practitioners from academia and industrial fields are invited to submit high-quality original contributions to IDC 2018.

Important dates:

Full paper submission	April 9, 2018
Notification	May 18, 2018
Final (camera ready)	June 4, 2018
Paper registration	July 9, 2018
Symposium	October 15-17, 2018

All accepted papers will be included in the Symposium Proceedings, which will be published by Springer as part of their series Studies in Computational Intelligence (<http://www.springer.com/series/7092>).

<http://IDC2018.jrllab.science>