

IDC 2019, Saint-Petersburg, Russia, October 7-9, 2019 - FIRST CALL FOR PAPERS

Symposium description

The 13th International Symposium on Intelligent Distributed Computing (IDC 2019) will be held October 7-9, 2019 in Saint-Petersburg, Russia.

The main goal of the symposium 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.

The IDC provides an open forum for enhancing the collaboration between researchers, lecturers, and students from Intelligent Computing and Distributing Computing communities. Intelligent Computing covers a hybrid palette of methods, techniques and their applications ranging from classical artificial intelligence, information and data sciences, multi-agent technologies or computational intelligence to more recent trends such as swarm intelligence, bio-inspired computation, cloud computing, machine learning or social-cyber-physical security.

Recent trends on this field present ephemeral computing, federated learning, swarm Intelligence, fog computing, semantic data science and others. 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 2019 welcomes research works centered on all aspects of intelligent distributed computing, with an intention to balance between theoretical research ideas and their application to great variety of industrial cases. To this end, scholars and practitioners from academia and industrial fields are invited to submit high-quality original contributions to IDC 2019.

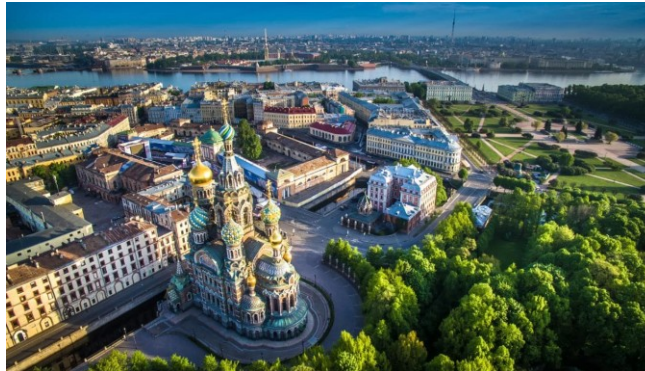
The structure of the symposium consists of regular sessions with technical contributions reviewed and selected by an international program committee, as well as of special sessions and workshops targeted on multi-disciplinary and cutting-edge topics.

IDC 2019 has a special interest in novel and creative approaches, architectures, systems and methods that facilitate distributed / parallel / multi-agent / bio-inspired computing for solving complex computational and communicational problems as well

as real-life challenges. The scope of this edition spans further to embrace recent paradigms in Distributed Computation.

Location

The IDC 2019 Symposium organized by Laboratory of Computer Security Problems of St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS) will be held in St. Petersburg, Russia.



Saint-Petersburg founded by Peter the Great in 1703, can rightly be called one of the most beautiful cities in Europe, united in its appearance European and Russian, architectural tradition.

It was the imperial capital for two centuries and remains Russia's cultural center, with venues like the Hermitage, one of the largest art museums in the world, the State Russian Museum showcasing Russian art, from Orthodox icon paintings to Kandinsky works, and the Mariinsky Theatre hosting opera and ballet. The historic centre of St. Petersburg and related groups of monuments constitute a UNESCO World Heritage Site.

The city is often called the "Venice of the North" because it is built on 44 islands, separated by 86 rivers and canals. Saint Petersburg is famous for its "white nights" when the end of May to mid-July instead of darkness envelops the city soft twilight, creating a unique romantic atmosphere, which is complemented by the classic St. Petersburg overlooking divorced bridges. St. Petersburg is not less beautiful, and in the winter, with encased in ice Neva and brilliant snow on the domes of St. Petersburg cathedral.



Important dates

Proposals for Tutorials/ Workshops/ Special sessions:	February 15th, 2019
Notification of acceptance for Tutorials/ Workshops/ Special sessions:	March 4th, 2019
Paper submission:	April 9th, 2019
Notification of acceptance:	May 31st, 2019
Final paper submission:	June 4th, 2019
Symposium dates:	October 7th-9th, 2019

Submission of Papers

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](#). Papers must be at most 10 pages long and must be formatted according to Springer format. Submissions and reviews are automatically handled by EasyChair. Please submit your paper at: <https://easychair.org/conferences/?conf=idc2019>.

Symposium Contacts

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Symposium Main Topics

Intelligent Distributed and High-Performance Architectures

- Hybrid distributed systems involving software agents and human actors
- Intelligent grid and cloud infrastructures
- Agent-based wireless sensor networks
- Distributed frameworks and middleware for the IoT
- Intelligent high-performance architectures
- Context-aware intelligent computing
- Virtualization for intelligent computing
- Bio-inspired and nature-inspired distributed computing

Computation Organization and Management

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

Parallel metaheuristics for optimization

- Evolutionary simulated annealing, Distributed Tabu Search
- Parallel Variable Neighborhood Search
- Swarm intelligence methods based on distributed knowledge sharing
- Hybridization of Swarm Intelligence techniques, Memetic Computing, Adaptive Swarm Intelligence
- Distributed Evolutionary Techniques, Cellular Evolutionary Algorithm, Hyper Heuristics

Ephemeral and Unreliable computing

- Theory and applications of complex ephemeral or unreliable environments
- Design of ephemeral computing systems
- Application of Soft Computing methods on computational environments featuring ephemeral behavior
- Meta-heuristics for modeling and analyzing systems with 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
- Fuzzy methods
- Ontologies and meta-data for describing heterogeneous resources and services
- Distributed fusion of sensor data streams

Networked Intelligence

- E-service and web intelligence
- Intelligence in mobile, ubiquitous and wearable computing
- Intelligence in peer-to-peer systems
- Intelligence in distributed and networked multimedia systems
- Security, privacy, trust and reputation

Parallel Computing

- Parallel and Distributed Computational Models
- Embedded Parallel Distributed Systems
- Multi- and Many-core Systems;
- GPU and FPGA based Parallel Systems
- Parallel Input/Output
- Memory Organization
- Parallel Cloud Computing
- Parallel and Distributed Optimizations
- Hardware Acceleration for Deep Learning

Data Science

- Big Data technologies
- Machine Learning
- Large Scale data processing
- Distributed databases and archives
- Data Management
- Semantic Data Science and Applications
- Soft Social Computing and Network Science
- Interdisciplinary Approaches in Data Science
- Data Intensive Applications
- Intelligent Analysis of Large Spatial Data

- Ontological based Approaches to Data Storage and Processing
- Data Sciences use-cases, including Social Network analysis

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- E-service and web intelligence
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Nature inspired methods for data science and machine learning

- Recent advances on nature inspired methods for data science
- Novel applications of bio-inspired methods to data mining, with priority on real-world scenarios
- Nature-inspired methods for supervised and unsupervised data mining
- Hybridizing bio-inspired methods with machine learning and data mining techniques
- Nature-inspired methods for feature selection and/or instance generation/selection
- Implementation of bio-inspired methods using Big Data technologies
- Federated learning: theory and applications

Intelligent Distributed Applications

- Security of Intelligent Distributed Systems
- Attack Modeling, intrusion detection and protection in Intelligent Distributed Systems
- Intelligent methods in Cyber-Physical Systems
- Distributed problem solving and decision making
- Semantic Applications
- Intelligent applications in e-business/e-commerce, e-learning, e-health, e-science, e-government, crisis management, smart grid
- Modeling, simulation and development of intelligent distributed systems
- Crisis management
- Simulation of groups and crowds
- Intelligent data processing
- Intelligent robots