

CALL FOR PAPERS

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IEEE Computational Intelligence Society Colombian Chapter and IEEE Colombia Section have chosen Bogotá D.C. city as the venue for the **IEEE Colombian Conference on Applications of Computational Intelligence - CoIACACI 2023**. Like the previous versions, the conference seeks to become the most important event in computational intelligence and related fields in Colombia, Andean and Latin American region, and other countries around, putting together academic, scientific, and industry.

During the past decade, CoIACACI has gained national and international recognition for its potential to receive contributions from important cities in Latin America. This sixth edition pretends to be a hub for the CI area, sharing knowledge and networks about the direct applications in our context.

We hope that local academy and industry will take active participation in CoIACACI 2023. Papers will be reviewed by an international technical committee under the IEEE standard procedure and accepted papers must be presented in oral session. This process is mandatory for the paper to be published in the conference proceedings (IEEE Xplore database, including ISBN).

TOPICS

We encourage the submission of original, unpublished research focused on (but not limited to) the following topics of interest:

NEURAL NETWORKS AND LEARNING MACHINES

- Cognitive models
- Neural control and planning
- Self-organization
- Deep learning
- Neural networks theory
- Bayesian networks
- Bayesian learning and approximate inference
- Kernel methods
- Generative models
- Information theoretic learning
- Reinforcement learning
- Feature extraction and manifold learning
- Data mining
- Pattern recognition and machine learning

FUZZY SETS AND SYSTEMS

- Fuzzy control, robotics, sensors, hardware and architectures
- Fuzzy data analysis
- Fuzzy clustering
- Classification and pattern recognition
- Fuzzy systems with big data and cloud computing
- Fuzzy systems design and optimization
- Fuzzy decision analysis
- Fuzzy logic and its application in Industrial engineering
- Fuzzy modelling, identification and fault detection
- Fuzzy information processing
- Fuzzy web engineering
- Fuzzy image, speech and signal processing
- Fuzzy sets and soft computing in social sciences
- Fuzzy logic applications in civil engineering, geographical information systems

EVOLUTIONARY AND SWARM ALGORITHMS

- Memetic and collective intelligence
- Artificial Immune Systems
- Metaheuristics and hyper-heuristics
- Ant colony for neural networks optimization
- Bio-inspired computing and Evolutionary algorithms
- Chaos theory in genetic algorithms
- Genetic fuzzy systems
- Genetic neural systems
- Multi-objective optimization
- Hybrid optimization techniques
- Hybrid intelligent systems for pattern recognition
- Nature-inspired smart hybrid systems
- Neuro-Fuzzy-Genetic approaches
- Neural Agents

OTHER APPLICATIONS OF CI

- Industry 4.0
- Robotics
- Internet of things
- Artificial Intelligence
- Biomedical engineering applications
- Image and signal processing
- Natural language processing
- Big data and scalable algorithms/applications
- Smart grid applications
- Intelligent transportation
- Smart traffic system operations
- Bioinformatics
- Brain computer interfaces
- Neurosciences
- Neural hardware Education

IMPORTANT DATES

Submission: March 24th, 2023
Notification: April 24th, 2023
Camera-ready: May 27th, 2023
Conference: July 26th - 28th, 2023

PAPER SUBMISSION

We invite authors to submit high-quality full papers reporting original and novel research results on all above topics. Papers must be written in **Spanish, Portuguese or English**, unpublished and not submitted elsewhere. Full papers must be formatted as the standard IEEE double-column conference template and submitted exclusively using the link <https://2023.ieee-colcaci.org/paper-submission/>. Maximum 6 pages are allowed for each paper, including all illustrations and references.