IEEE ColCACI 2025

IEEE COLOMBIAN CONFERENCE ON APPLICATIONS OF COMPUTATIONAL INTELLIGENCE

IEEE Computational Intelligence Society — IEEE CIS Colombian Chapter

IEEE Colombia Section

August 27th - August 29th, 2025 – Armenia, Quindio, Colombia

CALL FOR PAPERS

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Web page:
https://2025.ieee-colcaci.org/

IEEE Computational Intelligence Society Colombian Chapter and IEEE Colombia Section have chosen Armenia city as the venue for the **IEEE Colombian Conference on Applications of Computational Intelligence - ColCACI 2025**. 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, ColCACI has gained national and international recognition for its potential to receive contributions from important cities in Latin America. This **eighth 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 ColCACI 2025. 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We encourage the submission of original, unpublished research focused on (but not limited to) the following topics of interest: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

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

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

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

Paper Submissions: ~~May 11th, 2025~~ - **May 23th, 2025**
Paper Acceptance Notification: ~~June 14th, 2025~~ - **June 27th, 2025**
Camera Ready Deadline: ~~June 30th, 2025~~ - **July 15th, 2025**
Early Bird Registration: ~~June 17th, 2025~~ - **July 5th, 2025**

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 **English, Spanish, or Portuguese** 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://2025.ieee-colcaci.org/authors/. Maximum 6 pages are allowed for each paper, including all illustrations and references.

VENUE

Armenia City is the capital of the department of Quindio, in the Colombian region known as the coffee triangle. Since 2011, this region has been recognized by UNESCO as a world cultural heritage due to its exceptional landscapes mixing the natural beauty with the cultural traditions around the coffee culture. The department of Quindio is also the home of the Colombian national tree, the Quindio's wax palm, a unique palm that grows in the Cocora valley. Different outdoor activities and theme parks related to cultural and agricultural traditions are nearby Armenia, which turns out this event an opportunity not only for academic exchange but also for knowing and enjoying the traditions around the coffee culture.

The Universidad del Quindío is a Colombian public institution located in the city of Armenia, Quindío. Founded in 1960, it holds 7 faculties in several study fields, and a national accreditation. The engineering faculty is organized in four undergrad programs and two graduate programs.