



Special Session: IoT for Agriculture and Aquaculture

Organizing Chairs:

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Important dates:

Paper submission: Jul 30, 2023

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Camera-ready submission: Sep 29, 2023

Presentation submission: Oct 2, 2023



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Description:

Application of ICT technologies in the agricultural domain spreads across the entire agri-food supply chain – from the planting of seeds to the harvesting of crops, breeding livestock and treating disease, transporting goods and managing commercial sales, where agricultural innovations have a role to play at every stage. This new wave of agricultural innovations is fueled by the ever-increasing evolution of technologies in sensing, communication, artificial intelligence and other areas. Agricultural science and technology is rapidly becoming one of the world's fastest growing and exciting markets where the impact of innovations has explicit effects on humanity. It is driven by global changes: a rising population, rapid development of emerging economies with western lifestyle aspirations and growing geopolitical instability around shortages of land, water and energy. A technology revolution that is also taking place together with more stringent regulations directives where sustainability will be the key. Breakthroughs in nutrition, genetics, informatics, satellite imaging, remote sensing, meteorology, precision farming and low impact agriculture mean agricultural technologies have huge potential for development. The scale of farming worldwide has changed significantly in recent years, with a drastic increase toward, intensive, profit-driven enterprises due to market pressures. Nevertheless, in many countries small and medium companies are the key actors in this domain. This step change has resulted in a demand for technologies and equipment which can reduce costs and labor inputs with concurrent increases in capacity to provide economies of scale. These economies of scale will not yield profit unless quality is maintained, and this is a central focus of any new technologies developed for the sector. This special session will explore how Internet of Things technologies and artificial intelligence contribute to addressing all of these challenges through improvements in yield and efficiency with discussions from renowned experts in academia, industry, and the public sector. Research works on the following topics, but not limited to, are welcome for submission to this session:

ON FIELD OPERATIONS

- Livestock monitoring
- Micro-climate monitoring
- Infections & Disease Monitoring
- Ground Mapping & Sensors
- Productivity Maps
- Agri-robots & drones
- Autonomous driving in agriculture
- Animal attack protection
- Disease detection
- Plant nutrient control
- Robotic harvesting
- Growth and stress level monitoring

FARM OPERATIONS

- Predictive maintenance for machinery
- Production Automation
- Production Management
- Plant integration
- Acquaculture
- Underwater agriculture

SUPPLY CHAIN and SALES

- B2B, B2C, B2B2B
- Waste recovery and management

- Identification and tracking
- Productivity monitoring
- Fleet Management
- Order Management
- Logistic Management
- Distributed Ledger Technologies

DATA and COMMUNICATIONS

- Data platforms
- Data spaces
- Analytics for agriculture
- Big Data for agriculture
- Machine Learning for agriculture
- Edge computing in agriculture
- Cloud computing in agriculture
- Underground communications
- Wireless Sensors and Actuator Networks
- AI-based crowd-sensing and participatory approaches in agriculture
- Digital twin in agriculture
- IoT technologies for agricultural automation
- Time series models, specifically in the agriculture context

CONSUMER and SOCIETAL IMPACT

- Smart tags
- Meal kits
- Authenticity solutions
- Society 5.0
- Agriculture and Climate Change

Paper Submission:

All papers must be submitted through [eWorks](#). You must choose the special session track (**Spes-08**) when submitting your paper in order to be considered for this special session. The paper should be up to six (6) pages in length. The conference allows up to two additional pages for a maximum length of eight (8) pages upon payment of extra page fees once the paper has been accepted.

The paper can be prepared using the template available through the Authors / Proposers tab from the WF-IoT conference website main page at:

<https://wfiot2023.iot.ieee.org>.

An alternative is to use the IEEE Word or Latex tools that can be found through:

<https://conferences.ieeeauthorcenter.ieee.org/write-your-paper/authoring-tools-and-templates/>.

Authors of accepted papers will need to provide a final version of your paper in PDF format and upload it by the camera-ready deadline and complete the assignment of copyright and release form. For your paper to be included in the proceedings and published in IEEE Xplore, at least one author is required to register for WF-IoT 2023 by the deadline.

More information on the special session:

<https://wfiot2023.iot.ieee.org/iot-agriculture-and-aquaculture>
