



September 12-14, 2022
Cagliari, Italy



Special Session **Artificial Intelligence for RFID and IoT**

SESSION ORGANIZERS

Dr. Riccardo Colella (riccardo.colella@unisalento.it), University of Salento

Dr. Massimo Merenda (massimo.merenda@ait.ac.at), Austrian Institute of Technology

ABSTRACT

Miniaturized devices which exploit wireless connection for data and power transmission will play a critical role in a variety of contexts in the future, including e-health, smart automotive systems, wearable electronics, smart industrial, ambient-assisted living, among others.

From the antenna and electronics design to the protocols and standards employed, these devices' limited computing capabilities are a challenge to overcome with the appropriate methodologies and tools.

In this scenario, the rising topic of AI and ML applied to small electronics is a game-changing breakthrough, leading to previously unimagined applications involving edge sensing, monitoring, and decision-making, as well as the edge-cloud continuum.

The primary objective of this Special Session is to encourage experts working towards this topic to propose innovative approaches, techniques, applications, and technologies that will allow machine learning models to decode the meaning and behavior of data from RFID and IoT sensors, producing accurate predictions and making decisions.

The topics of interest include, but are not limited to, the following:

- Edge machine learning applied to RFID and IoT
- RF-based energy harvesting and smart power management systems
- Non-invasive wireless biosensors for e-health
- Flexible/wearable miniaturized wireless sensors
- Antenna design for RFID and IoT sensing applications (MIMO, Smart Antennas, etc.)
- Novel materials and techniques for RF electronics applied to RFID (3D printing, additive manufacturing, etc.)
- Fully-integrated RFID components for AI-based sensing and communication
- Pervasive next-generation IoT and 5G wireless RFID smart sensing