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Communications Enabling Shared Understanding

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Call for Papers

Selected Areas in Communications Symposium

Internet of Things Track

Track chairs

- Marios Angelopoulos, Bournemouth University, UK
  mangelopoulos@bournemouth.ac.uk
- Antonio F. Skarmeta, Universidad de Murcia, Spain
  skarmeta@um.es

Scope and Topics of Interest

With the promise of revolutionizing the way we live, work and manufacture, it is no surprise that the Internet of Things (IoT) has picked up momentum in both industry and academia. According to various studies, tens of billions of devices are expected to be connected to the internet by 2020. Thanks to the increased connectivity and the continued miniaturization of computers and smart devices, IoT will generate huge volumes of data that will have to be analyzed to uncover hidden patterns, correlations and other insights. Moreover, in the industrial environments (Industry 4.0) as well in smart spaces (building, houses, etc.) and connected cars communications will require higher reliability, lower latency and scalability. Several technologies such as BLE, Zigbee, WirelessHART, 6TiSCH, LPWAN (LoRa, Sigfox, etc.) have been proposed to tackle these requirements. 5G networks promise not only increased data rates but also ultra-low data latency communication for critical IoT applications that require extreme reliability. 5G will enable Machine Type Communication (MTC) one of the most promising technologies for IoT applications which is gaining a tremendous interest among mobile network operators, equipment vendors, MTC specialist companies, and research bodies.

The anticipated high-traffic demand, low-latency and deterministic delivery requirements stemming from IoT and machine-to-machine (M2M) communications can be met only with radical changes in terms of architecture and communication solutions. Recently, Fog/Edge-to-thing continuum is proposed to mitigate the heavy burden on the network due to the centralized processing and storing of the massive IoT data. Fog/Edge-enabled IoT architectures ensure closer processing in proximity to the things, which results in small, deterministic latency that enables real time applications and enforced security.

The aim of the Internet of Things Track is to provide a forum that brings together scientists and researchers to present their cutting-edge innovations in all aspects of the field. This track solicits technical papers describing original, previously unpublished papers pertaining to trends, issues and challenges of the Internet of Things. We invite submissions on a wide range of research topics, spanning both theoretical and systems research, including results from industry and academic/industrial collaborations, related but not restricted to the following topics:

- Ambient Intelligence
- Application of Fog/Edge computing to IoT: architectures and implementations
- Autonomic Computing
- Blockchain technology for IoTs
- Communications technologies: NB-IoT, LoRa, Sigfox, …
- Complex and Compound Sensors
- Connected Car, Automotive, Intelligent Transport
- Cooperative Computing
- Cooperative Sensor Systems
- Design principles and best practices for IoT application development
- Dynamic scheduling, power control, interference management, and QoS management in IoT networks
- Experience and lessons learnt for standards based IoT large scale pilots/demonstrators
- Fog/Edge Caching techniques for IoT
- Innovative routing and scheduling protocols
- Interoperability methodologies for heterogeneous IoT
- IoT big data and predictive analysis
- IoT for developing countries
- IoT for smart manufacturing (industry 4.0) and smart spaces
- IoT standards platforms interworking
- Horizontal application development for IoT
- Low-power Computing
- Massive MTC (mMTC)
- Messaging Technologies for the Industrial IoT (Google QUIC, DDS, AMQP, MQTT, MQTT-SN, CoAP, etc.)
- Mobile platforms as sensors
- Mobility, Localization and context-adaptive Internet of Things
- New communications media for Low Power Wide Area Networks
- Practical Perspectives on IoT in 5G Networks
- RFID sensing technology
- Secure and privacy-preserving IoT communications
- Sensor Integration
- Smart Cities, Smart Home
- Software Defined Networking (SDN) and NFV for IoT
- Web of Things

Submission Guidelines

The IEEE ICC 2020 website (icc2020.ieee-icc.org) provides full instructions on manuscript format and how to submit a manuscript. You will select the desired symposium/track when submitting your manuscript.