



## AIMS OF THE WORKSHOP

An increasing number of real-world objects are becoming accessible and manageable through the Internet. According to CISCO, the number of these devices will reach 50 billion by 2020, forming a very large Internet of Things (VLIoT). This massive number of "smart" objects will cooperate with each other, have their own metadata, and may continuously produce new data (in form of events, sensor data, or actuator states). Data management will be a major challenge in the very large Internet of Things. Hence, efficient IoT infrastructure and technologies must be developed to handle masses of IoT data with high performance. This will include: new techniques to filter and store relevant data; efficient replication approaches for objects with constrained resources in order to increase availability and durability; new protocols for voting about decisions among objects; and smooth integration of heterogeneous objects.

The goal of this workshop is to bring together academic researchers and industry practitioners working in the field of IoT and to allow them to report and exchange their findings addressing these challenges. This workshop also intends to discuss other closely-related technologies such as Nanotechnology, Fog-, Edge-, and Dew-Computing for IoT. The ideas of Fog, Edge and Dew Computing may indeed solve or attenuate the problems of a very large Internet of Things (w.r.t. performance, energy-efficiency, as well as security and privacy aspects).

## TYPES OF PAPERS

The workshop welcomes contributions describing original ideas, promising new concepts, and practical experience. In particular, we solicit papers of different types:

- **Research Papers** proposing new approaches, theories or techniques related to Internet of Things, including new data structures, algorithms, whole systems, and frameworks. They should make substantial theoretical and empirical contributions to the research field.
- **Experiments and Analysis Papers** focusing on the experimental evaluation of existing approaches including data structures and algorithms for Internet of Things and bring new insights through the analysis of these experiments. Results of experiments and analysis papers can be, for example, showing benefits of well-known approaches in new settings and environments, opening new research problems by demonstrating unexpected behavior or phenomena, or comparing a set of traditional

approaches in an experimental survey.

- **Application Papers** reporting practical experiences on Internet of Things applications. Application papers might describe specific application domains in the IoT such as smart homes/offices/cities, continuous health care, waste management, emergency response, intelligent response, and Industry 4.0.
- **Vision Papers** identifying emerging or future research issues and directions, and describing new research visions in the IoT area that may have a great impact on our society.

## TOPICS OF INTEREST

We welcome papers on the following and other relevant topics:

- Semantic IoT
- Privacy-by-design and security-by-design in IoT
- System architectures for IoT, e.g.
  - things-centric,
  - data-centric,
  - event-centric, and
  - service-centric.
- IoT applications including:
  - smart homes/offices/cities,
  - waste management,
  - health care,
  - emergency response, and
  - intelligent shopping.
- Nano Technology including:
  - Nano Networks,
  - Nano communication,
  - Nano applications,
  - Nano computing, and
  - Internet of Nano Things.
- IoT programming toolkits and frameworks
- IoT prototypes and evaluation test-beds
- IoT data mining and analytics
- IoT management and interoperability
- Management of IoT streams
- Enabling technologies and standards for the IoT
- Spatial and temporal reasoning for IoT
- Sustainability of IoT platforms, e.g. business models for deployment and maintenance
- Societal challenges and IoT, e.g. urban planning and decision making tools
- Ownership of data in IoT scenarios
- Fog, Edge and Dew Computing for IoT
- IoT benchmarks and performance measurement
- Indexing and search in IoT environments
- IoT transactions, concurrency control and recovery
- Hardware accelerators and energy savers for IoT applications and core infrastructure

- IoT discovery of devices, services and data

## WORKSHOP CHAIRS

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- Sven Groppe, University of Lübeck, Germany
- Markus Endler, PUC Rio, Brasil

## PROGRAM COMMITTEE

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- Lorena Etcheverry, Universidad de la República, Uruguay
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- Uden Lorna, Staffordshire University, UK
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- Marco Vieira, University of Coimbra, Portugal
- Yingwei Wang, University of Prince Edward Island, Canada
- Demetris Zeinalipour, University of Cyprus, Cyprus

## IMPORTANT DATES

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<b>Submission (extended):</b>	May 2, 2019
<b>Notification:</b>	May 31, 2019
<b>Workshop:</b>	August 30, 2019

## SUBMISSION

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Authors are invited to submit original, unpublished research papers that are not being considered for publication in any other forum.

Accepted papers will be published online in the [Open Journal of Internet of Things](#). OJIOT is an open access journal, and the proceedings will hence be highly visible to all interested readers.

Manuscripts should be formatted using the [templates of the Open Journal of Internet of Things](#). Research papers as well as experiments and analysis papers should have between 6 and 15 pages, application papers between 6 and 12 pages and vision papers between 4 and 12 pages.

We describe manuscript preparation and submission procedure at

<http://www.ifis.uni-luebeck.de/~groppe/vliot/submit>