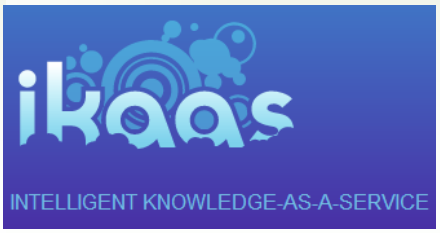
July 7-10 2015, Grenoble, France

CALL FOR PAPERS

INTERNATIONAL WORKSHOP ON SELF-AWARE INTERNET OF THINGS

Self-IoT 2015

in conjunction with ICAC 2015, The 12th IEEE International Conference on Autonomic Computing



Spectacular advances in technology have introduced increasingly complex and large-scale computer and communication systems. Autonomic computing has been proposed as a grand challenge that will allow the systems self-manage this complexity, using high-level objectives and policies defined by humans. Internet of things (IoT) as well as big data technologies will exponentially increase the scale and the complexity of existing computing and communication systems; the autonomy is thus an imperative property for real-time IoT systems.

However, there is still a lack of research on how to adapt and tailor existing research on autonomic computing to the specific characteristics of IoT, and the big data it generates, such as high dynamicity and distribution, scalable, real-time nature, constraints resources and lossy environments. The goal of this Third International Workshop on Self-aware Internet of Things is to deal with the important, challenging and emerging needs of business applications that are becoming omnipresent in our daily lives (e.g., at home, office, transport, city and urban environments).

The Self-IoT aims to be a reference workshop that will gather different scientific communities from academy and industry under one common objective: realizing plug&play, context-aware and autonomous Internet of things and big data systems that will be self-configured, self-organized, self-optimized and self-healed without (or with minimum) human intervention. It will also address the proactive and prediction analysis.

ORGANIZERS

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Important Dates

Paper submission: Apr 13 2015
Author notification: May 15 2015
Camera ready due: May 22 2015
Workshop date: July 7 2015

PROGRAM COMMITTEE

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To be completed…

The workshop is looking for novel ideas, works in progress or deployment experiences in application domains such as smart city, smart home/building, smart transport, smart retail and smart healthcare. The topics of interest include:

- Software engineering for self-adaptive internet of things, model-oriented approaches, automated tools for development, deployment and supervision of IoT devices and services
- Novel software architectures, multi-agent approaches for autonomic IoT
- Management data models, protocols and APIs that support self-management for IoT devices and services
- Continuous data monitoring, data stream management systems, on-line data mining, machine-learning, complex event processing mechanisms and pattern detection techniques in real time; on-device and in-network data processing
- Dynamic and autonomic big data technologies
- Autonomous IoT systems, IoT Clouds, self-provisioning of IoT Services
- Control theory in IoT, distributed control loops, decision making mechanisms, prediction models at run-time, learning from experience, relations with artificial intelligence techniques
- Modelling environmental context and user behaviour, semantic IoT, self-adaptation to context
- Event-Condition-Action rules, objective functions, or prediction models applied to the IoT, adaptation of techniques such as Bayesian networks, decision trees or fuzzy logic to the IoT context;
- Performance monitoring, diagnostics and self-healing of the IoT
- Plug-n-play IoT, IoT device/service discovery protocols, self-matchmaking of Internet of things and Internet of services
- Self-powering IoT, energy harvesting techniques (solar, thermal, vibration, etc.), techniques and algorithms for optimisation of energy consumption
- Security and privacy issues in the IoT, protecting the cyber-physical environments from malicious attacks.
- Autonomic dependency management; robust and trustable IoT systems
- Intuitive user-assistance with multi-modal tools and interfaces, increasing quality of experience
- Self-organizing network protocols, ad-hoc routing mechanisms, cognitive networks adapted to resource constrained devices and lossy environments
- Autonomic experience in IoT applications such as smart home/building, smart transport, smart city, smart healthcare and smart retailer.

The workshop is sponsored by 2 European-Japanese collaborative projects: ClouT (http://clout-project.eu) and iKaaS (http://ikaas.com/)

SUBMISSION INSTRUCTIONS

Papers should be a maximum of 6 pages in the IEEE format as described at the link below:
http://www.ieee.org/conferences_events/conferences/publishing/templates.html
Submitted papers must be original work and may not be under consideration for another conference or journal. All papers will be reviewed by at least three program committee members. Accepted papers will be distributed at the conference electronically and be published by IEEE Computer Society Press. They will also be in the IEEE digital library.
Papers can be submitted via the easychair using the following link:
https://www.easychair.org/conferences/?conf=selfiot2015 (TBC)