Title: Internet of Things: Monitoring and optimization challenges for Security issues

Abstract

In Internet of Things (IoT), availability of devices, reliability of communication, Quality of Service (QoS), and security are all essential for the good functioning of applications. Over the time, the state of devices and the overall network may depreciate. This is due to the challenging and failure-prone nature of IoT; consisting of a huge number of heterogeneous and resource-constrained things in terms of memory, communication, energy and computational capabilities. Furthermore, energy constraints impose hard duty cycles to maximise longevity, which in turn causes unreliable connectivity.

To ensure robustness, monitoring the network state, performance and functioning of the nodes and links is crucial, especially for critical applications. Safety-critical applications, such as a distributed fire- or burglar-alarm system, require that all sensor nodes are up and functional.

Monitoring techniques for detecting, localizing and recovering network failures in IoT should be significantly developed.

In this talk, we will first introduce the Internet of Things, its challenges and the monitoring concept. We will present the Research motivations and objectives for the monitoring. After presenting the stat-of-the-art research on monitoring, we will present our theoretical solutions for monitoring IoT.

We target the optimization of IoT network monitoring for fault tolerance, security and quality of service purposes.