Abstract:

Despite the rapid progresses in IoT research, a general principled software engineering approach for the development of IoT systems and applications is still missing. In this research we attempt at framing the key concepts and abstractions that revolve around the design and development of IoT systems and applications, and that could represent the ground of a new IoT-oriented software engineering discipline.

Early researchers in the IoT area have mostly focussed on communication issues and on enabling interoperability. However, despite the great deal of worldwide researches in the area, the technologies to make IoT a systematic reality are far from being assessed. More recently, great efforts has been devoted at promoting means to facilitate the integration of resources and services towards the provisioning of software-defined distributed services for the IoT.

Our research attempts at framing some key general characteristics related to the engineering of complex IoT systems and applications, by synthesizing the common features of existing proposals and application scenarios. Our aim is to identify the key software engineering concepts around which the process of developing IoT systems and applications could revolve. We will be mainly focusing on large number of physical objects i.e. Things in IoT. In order to make use of “Things” and capable of serving purposes we need Software Infrastructure i.e. IoT middleware. Specific softwares are deployed to orchestrate the activities of the IoT system.

The expected outcome of our review is to implement software engineering principles to identify the general features and issues that characterize most current approaches to IoT systems design and development. By having proposed and framed some key conceptual abstractions revolving about the IoT universe, can represent a first small step towards a general discipline for engineering IoT systems and applications.

Five Main References:


Other References:

