

Autonomous Sensor Platform

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1 Introduction to IoT

Internet of Things **IoT** is one of the most trending topics in the technology industry. It is a term that denotes a network with different sensors like a camera, motion or light sensors and many others, connecting several of our daily life components allowing them to collect, exchange and share Information. Moreover, it allows the network to control them, for instance, imagine being able to control the lights, oven, heater or any other domestic device from your phone or laptop that connects to the IoT network.

2 Autonomous Sensor Platform

Given that an IoT network connects to a lot of sensors with different nature and input information and thus different data models, it has become very hard to deal with all this data models. Also, gathering data on an IoT network has its weak points, where are all this data going to be stored ?, IoT networks are fairly known to be of small capacity and computation capabilities.

In this topic we wish to explore and try to answer some of the research questions that remains unanswered.

2.1 Data Modeling

Can we come up with data model that best suits all the types of input information which are gathered from the sensors and connected devices ?

2.2 Data Storage, Distribution & Consistency

What is the best database engine to use in order to facilitate data storage and to be able to query this data in an efficient way. Furthermore, can we distribute the data among other IoT networks and devices, so that we can overcome the problem of data capacity on these IoT networks ?, and if we can distribute the data, how can we handle data consistency ?.

2.3 Computation & Limitations

How can we generically and dynamically ask the network to compute expressions for our needs?

What are the limitations of the current IoT networks in terms of computation power, what could be computed on the network itself and what must be delegated to other servers with higher computation power

2.4 Security & Privacy

How can we keep this information secure? and does doing computation on IoT network provides more privacy by not storing private information on the cloud ?.