

Edge Computing Proposed System Architecture for Industrial Data Analysis Applications

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Abstract

The increased use of cloud and networking in different life sectors results in high bandwidth consumption, leading to higher energy usage in order to access network and deliver the transferred information to cloud data centres. As well as the related increase in the number of cloud providers is a first step towards edge computing technology, which will bring about a reduction in the latency of data processing, thus boosting the processing capacity distributed. On the other hand, and with the widespread deployment of IoT applications towards a green sustainable society, the demand has increased for having solutions which optimize cost efficiency, reduce operating costs and facilitate network monitoring. Edge computing is one of the promising new technologies which can be merged with cloud architecture to obtain privileged operations through the network. Moreover, the energy demand of edge devices has increased and started to become a noticeable issue for the suitable development of urban systems. Our work proposes a new system architecture based on Edge computing technology for a pre-implemented anomaly detection application. The latter was applied in the production line of sun cells in the 3SUN Factory of Enel Green Power in Catania, it predicts faults related to the technical process of an installed machine in the factory and launches alarms in case of exceeding a pre-defined threshold. Many sensors are installed in the field to measure the relevant parameters of each equipment in the production line such as temperature, pump speed, flow speed, and ozone concentration level.

Biography

Nour Alhuda Sulieman currently working Industrial Ph.D. student in civil, environmental, and security engineering

(Big data analysis in smart cities).