ORIGINAL ARTICLE

MULTISENSORY DATA ACQUISITION SYSTEM FOR IOT APPLICATIONS

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ABSTRACT:
A multisensory data fusion system is required for a number of industrial applications such as process control, monitoring, and safety. A system of this kind should also provide real-time data for efficient process management and automation. Installation of several identical or complementary sensors in various system components is a need for a multisensory data fusion system in order to collect limited and partial information. An internet connection would enable a system like this to provide remote process control and save data in the cloud for commercial analysis [1]. In this work, a multimodal sensing system prototyped using temperature, humidity, barometric pressure, gas, and optical dust sensors [2]. The ESP8266 initially transforms the sensor data into a readable format. The ESP 8266 module transmits the data to the cloud using the Thingspeak interface [1-3]. This system is useful for generating real-time command signals for the various actuators.

KEYWORDS: IoT, Thingspeak, cloud computing, , embedded system, Machine Learning, Data Analytics

INTRODUCTION:

In any industrial automation sensors are the input devices such as temperature sensor, that produce an output (signal) in proportion to a specific change in temperature (input) whereas the actuators are just converting the electrical signal or command into a physical quantity such as the loudspeakers which convert electrical signal to the sound signal. Sensors are the key element in the process of automation because they endow objects with intelligence and exceptional automaticity, and thus a crucial part of industrial automation [3-4]. Mostly the industrial process control need several sensors working together to provide real time data and must be interfaced and configured to perfection.

PLCs are controllers that automate industrial processes and keep track of themselves. Several industries utilize programmable logic controllers to automate process control, reduce human involvement, and prevent errors [4]. With the rapid advancement of technology, wireless instrumentation has emerged to gain effective control without using cabling infrastructure. The multimodal data collecting system prevent human interference and achieve greater automation and control. The use of the Thingspeak interface is very useful to collect the data from various sensors and study the data for better industrial output [5-7].