LITERATURE SURVEY

Real-Time River Water Quality Monitoring and Control System

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1)Internet of things enabled real time water quality monitoring system

S. Geetha & S. Gouthami

Smart solutions for water quality monitoring are gaining importance with advancement in communication technology. This paper presents a detailed overview of recent works carried out in the field of smart water quality monitoring. Also, a power efficient, simpler solution for in-pipe water quality monitoring based on Internet of Things technology is presented. The model developed is used for testing water samples and the data uploaded over the Internet are analyzed. The system also provides an alert to a remote user, when there is a deviation of water quality parameters from the pre-defined set of standard values.

2) Review of Water Quality Monitoring using Internet of Things (IoT)

Mr. A. P. Roger Rozario, R. Surya

The quality of the water must be monitored in real-time to ensure its safety and supply. Monitoring water in traditional ways takes longer, which can take up to from 24 to 96 hours to identify contaminants in water supplies, which are more time taking. This project aims at developing a water quality monitoring system using sensors and IoT (Internet of Things). The water quality parameters like temperature, pH, and turbidity are measures using sensors and the water quality index is determined. The measured values from the sensors will be processed using a microcontroller, and alert message will be sent to the user via an android application developed using MIT app inventor in case of any abnormalities.

3)IoT based smart water management system

ManmeetSingh, SuhaibAhmed

Water is an all-important need of all living beings. With the exponential growth of the human population, the need for conservation of water resources is gaining greater importance. Many water management systems have been proposed in the past using different technologies to address the issue which are high in cost and energy consumption. With the advent of the Internet of Things (IoT), the pursuit of the smart water management system is gaining momentum. This study first discusses the architecture and various components of IoT based water management system in detail followed by in-depth survey of all existing IoT based water management systems. Various measurement parameters such as water level, pH level, turbidity, salinity, etc. used in different water management systems proposed in the literature have also been identified and a comparison of various systems based on these parameters has also been presented. Finally, based on the survey, list of various essential attributes of these systems are framed which must be incorporated in future designs. In addition to this, an architecture of a smart water management system based on IoT and Machine learning has also been proposed as future scope which addresses all these essential attributes and also uses machine learning based predictions which can increase the efficiency of the smart management system.

4) IoT-based System for Real-time Water Pollution Monitoring of Rivers

Mohammad Ariful Islam Khan; Mohammad Akidul Hoque; Sabbir Ahmed

The research proposes a system to remotely monitor the water quality of a river so that the authorities can gather better insights about the condition of

that particular river and predict the critical future phenomena. Consequently, they will be able to take auspicious steps in order to protect the rivers and save the environment. The proposed framework can observe the real-time value of pH, conductivity, turbidity, temperature and flow of the water by utilizing various sensors. Furthermore, through our device, effective predictions about imminent floods can be made. Thus, authorities can commence early warning for floods and ensure prompt evacuation. Thus, our technique can significantly minimize the casualties caused by this disaster. In this context, real-time feeds are obtained through Internet of Things (IoT). For wireless data transmission Message Queuing Telemetry Transport (MQTT) is used.

5)IoT Based Real-time River Water Quality Monitoring System

Mohammad Salah UddinChowdury,Talha BinEmran,SubhasishGhosh,AbhijitPathak,Mohd. ManjurAlam,NurulAbsar,KarlAndersson,Mohammad ShahadatHossain

Current water quality monitoring system is a manual system with a monotonous process and is very time-consuming. This paper proposes a sensor-based water quality monitoring system. The main components of Wireless Sensor Network (WSN) include a microcontroller for processing the system, communication system for inter and intra node communication and several sensors. Real-time data access can be done by using remote monitoring and Internet of Things (IoT) technology. Data collected at the apart site can be displayed in a visual format on a server PC with the help of Spark streaming analysis through Spark MLlib, Deep learning neural network models, Belief Rule Based (BRB) system and is also compared with standard values. If the acquired value is above the threshold value automated warning SMS alert will be sent to the agent. The uniqueness of our proposed paper is to obtain the water monitoring system with high frequency, high mobility, and low powered. Therefore, our proposed system will immensely help Bangladeshi populations to become conscious against contaminated water as well as to stop polluting the water.