A TIME EFFICIENT APPROACH FOR DETECTING ERRORS IN BIG SENSOR DATA ON CLOUD

ABSTRACT

Big sensor data is prevalent in both industry and scientific research applications where the data is generated with high volume and velocity it is difficult to process using on-hand database management tools or traditional data processing applications. Cloud computing provides a promising platform to support the addressing of this challenge as it provides a flexible stack of massive computing, storage, and software services in a scalable manner at low cost. Some techniques have been developed in recent years for processing sensor data on cloud, such as sensor-cloud. However, these techniques do not provide efficient support on fast detection and locating of errors in big sensor data sets. For fast data error detection in big sensor data sets, in this project, we develop a novel data error detection approach which exploits the full computation potential of cloud platform and the network feature of WSN. Firstly, a set of sensor data error types are classified and defined. Based on that classification, the network feature of a clustered WSN is introduced and analyzed to support fast error detection and location.

Specifically, in our proposed approach, the error detection is based on the scale-free network topology and most of detection operations can be conducted in limited temporal or spatial data blocks instead of a whole big data set. Hence the detection and location process can be dramatically accelerated. Furthermore, the detection and location tasks can be distributed to cloud platform to fully exploit the computation power and massive storage. Through the experiment on our cloud computing platform of U-Cloud, it is demonstrated that our proposed approach can significantly reduce the time for error detection and location in big data sets generated by large scale sensor network systems with acceptable error detecting accuracy.
EXISTING SYSTEM

In existing system, for processing sensor data on cloud, such as sensor-cloud. However, these techniques do not provide efficient support on fast detection and locating of errors in big sensor data sets.

DRAWBACK OF EXISTING SYSTEM

- Difficult to process using on-hand database management tools
- Do not provide efficient support on fast detection and locating of errors in big sensor data sets.

PROPOSED SYSTEM

Cloud computing provides a promising platform to support the addressing of this challenge as it provides a flexible stack of massive computing, storage, and software services in a scalable manner at low cost.

Error detection is based on the scale-free network topology for fast data error detection in big sensor data sets, in this project, we develop a novel data error detection approach which exploits the full computation potential of cloud platform and the network feature of WSN.

ADVANTAGE OF PROPOSED SYSTEM

- Reduce the time for error.
- Detection and location in big data sets generated by large scale sensor network systems with acceptable error detecting accuracy.
- Big data processing with powerful computation capability, storage, scalability, resource reuse and low cost.
SYSTEM SPECIFICATION

Hardware Requirements

- System : Pentium IV 2.4 GHz
- Hard Disk : 40 GB
- Floppy Drive : 1.44 Mb
- Monitor : 15 VGA Colour
- Mouse : Logitech
- Ram : 512 Mb

Software Requirements

- Operating system : Windows XP
- Technology Used : Microsoft .NET
- Backend Used : SQL Server