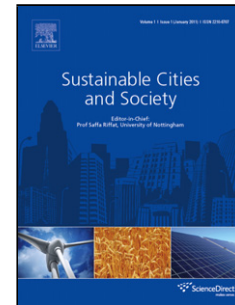


Accepted Manuscript

Title: SMART TSS: Defining Transportation System Behavior using Big Data Analytics in Smart Cities

Authors: Moneeb Gohar, Muhammad Muzammal, Arif Ur Rahman



PII: S2210-6707(17)30975-7
DOI: <https://doi.org/10.1016/j.scs.2018.05.008>
Reference: SCS 1086

To appear in:

Received date: 1-8-2017
Revised date: 22-3-2018
Accepted date: 4-5-2018

Please cite this article as: Gohar M, Muzammal M, Rahman AU, SMART TSS: Defining Transportation System Behavior using Big Data Analytics in Smart Cities, *Sustainable Cities and Society* (2018), <https://doi.org/10.1016/j.scs.2018.05.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

SMART TSS: Defining Transportation System Behavior using Big Data Analytics in Smart Cities

Moneeb Gohar, Muhammad Muzammal, Arif Ur Rahman

Department of Computer Science, Bahria University, Islamabad, Pakistan

Highlights

- A smart city improves the quality of its citizens by providing access to ubiquitous services. Intelligent Transportation Systems (ITS) have a fundamental role in transforming a metropolitan area into a smart city.
- In the past two decades, many applications of ITS, e.g. city-wide traffic management and monitoring, smart parking, public transportation information services (bus, train, taxi, plane, etc.), logistics, real-time traffic, road speed limit monitoring and management etc., are deployed in smart cities.
- The sensors or mobile objects in ITS constantly generate mobility data and the scale at which this data is generated is witnessing an exponential increase in volumes. To store and subsequently analyze such massive data generated by sensors, new architectures are needed which are primarily designed for working with big data.
- We propose a big data analytics architecture for ITS. The proposed architecture has a built-in storage and analysis capability to work with ITS data and is composed of four modules, namely (1) Big Data Acquisition and Preprocessing Unit (2) Big Data Processing Unit (3) Big Data Analytics Unit and (4) Data Visualization Unit.
- A detailed analysis of ITS big data for monitoring the average speed of a vehicle at w.r.t. the time attribute is provided. The proposed architecture is evaluated using Hadoop thus validating the proof of concept. The empirical results are encouraging and open directions for future research.

Download English Version:

<https://daneshyari.com/en/article/6774891>

Download Persian Version:

<https://daneshyari.com/article/6774891>

[Daneshyari.com](https://daneshyari.com)