Towards a Framework for Context-Aware Intelligent Transportation System: Case of Kigali

Abstract:

The Intelligent Transportation System (ITS) proved to be a cost-effective transportation solution. Artificial Intelligence (AI), Machine Learning (ML), and the Internet of Things (IoT) are supposed to take advantage of big data's accessibility for successful data processing. Development of platforms compatible with innovative services will improve living standards. Research in the ITS field together with their deployment is focused on developed countries.

It is important to explore the concept in developing countries. In this paper, a survey was conducted using a random sampling technique to obtain opinions, readiness for ITS, existing technologies, and transportation applications. The analysis of the results showed that 73.78% are not familiar with ITS. An overview of the challenges for intelligent transport in the region with a specific focus on road safety is presented.

An IoT based conceptual framework is proposed to improve the transportation system specifically in Rwanda. This research contributes to raising awareness of the possibility of ITS.

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