Urban Informatics and the Web

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ABSTRACT

Based on a recent report from the United Nations, more than 50% of the world's population currently lives in cities. This percentage is projected to increase to 70% by the year 2050 [1]. As massive amounts of people move to urban areas there is a need for cities to be run more efficiently, while at the same time improving the quality of life of their dwellers. Nevertheless, the exact same force that sets the above requirement, i.e., the proliferation of urbanization levels, makes this task much harder and challenging, especially in megacities. Despite the aforementioned conflicting dynamics, many city management operations can be facilitated by appropriate exploitation of the unprecedented amount of data that can be made available to authorities from a variety of sources. In the era of big data and ubiquitous and pervasive mobile computing, different types of sensors such as parking meters, weather sensors, traffic sensors, pipe sensors, public transportation ticket readers and even human sensors (e.g., through web technologies, social media or cell phone usage data) can assist in these efforts. Furthermore, civic applications can exploit web and mobile technologies to deliver a livable, sustainable and resilient environment to the citizens. Harnessing these information streams and technologies presents many challenges that are in the epicenter of this tutorial. In this tutorial we will present the current practices and methods in the emerging field of urban informatics as well as the open challenges. The topics to be covered in this tutorial are structured in three sessions: (i) introduction to urban studies and urban informatics, (ii) civic data and technologies for urban sensing and (iii) analytical techniques used for urban data analysis. Finally, we will also provide concrete examples of urban informatics applications.

Categories and Subject Descriptors

J.4 [**Social and Behavioral Sciences**]: Sociology; H.2.8 [**Database Applications**]: Data mining

General Terms

Urban informatics

Keywords

Urban theory; Urban data; Latent urban pattern discovery

1. REFERENCES

[1] United nations-world urbanization prospects: The 2014 revision - highlights [available at: http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf].