

عنوان مقاله:

A new system architecture for real-time crowd detection for smart city and smart buildings

محل انتشار:

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خلاصه مقاله:

City are growing at a dizzying pace and they require improved methods to manage crowded areas. Crowd management stands for the decisions and actions taken to supervise and control densely populated spaces and it involves multiple challenges, from recognition and assessment to application of actions tailored to the current situation. To that end, Wi-Fi-based monitoring systems have emerged as a cost-effective solution for the former one. The key challenge that they impose is the requirement to handle large datasets and provide results in near real-time basis. However, traditional big data and event processing approaches have important shortcomings while dealing with crowd management information. In this paper, we describe a novel system architecture for real-time crowd recognition for smart cities and smart buildings that can be easily replicated. The described system proposes a privacy-aware platform that enables the application of artificial intelligence mechanisms to assess crowds' behavior in buildings employing sensed Wi-Fi traces. Furthermore, the present paper shows the implementation of the system in two buildings, an airport and a market, as well as the results of applying a set of classification algorithms to provide crowd management information.

کلمات کلیدی:

Smart city, Internet of Things, crowd management, artificial intelligence, positioning

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