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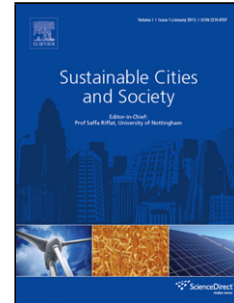
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Security and Privacy Challenges in Smart Cities

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Abstract

The construction of smart cities will bring about a higher quality of life to the masses through digital interconnectivity, leading to increased efficiency and accessibility in cities. Smart cities must ensure individual privacy and security in order to ensure that its citizens will participate. If citizens are reluctant to participate, the core advantages of a smart city will dissolve. This article will identify and offer possible solutions to five smart city challenges, in hopes of anticipating destabilizing and costly disruptions. The challenges include privacy preservation with high dimensional data, securing a network with a large attack surface, establishing trustworthy data sharing practices, properly utilizing artificial intelligence, and mitigating failures cascading through the smart network. Finally, further research directions are provided to encourage further exploration of smart city challenges before their construction.

Keywords: Smart cities, information security, privacy protection, cyber-physical systems.

1. Introduction

It is the year 2027 and your day is full. As you finish your coffee and start to organize your desk to leave work, your boss tells you that you need to stay late. A quick moment of panic sets in, but you push past it and take action. In order to pick your son up from school you call an autonomous car with a quick swipe of your thumb and the service sends his smartphone the Quick Response (QR) code to access the car moments later. As you

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