Urban street cleanliness assessment using mobile edge computing and deep learning

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Abstract:

During the construction of smart cities, city leaders always spend a lot of energy and money to clean up the street garbage due to irregularity of street garbage. Therefore, visual assessments of street cleanliness is particularly important. However, current measures have some shortcomings, for example, the collection of road waste data is not automated and road maintenance data is not scheduled. To solve these problems, this paper proposes a new urban security assessment using mobile applications and deep learning. First of all, high resolution cameras are placed in the vehicle to record images. Mobile edge servers are used to temporarily store and store data in transit. Second, this road information is sent to weather data from the city network for analysis. At the same time, a faster regional convolutional neutral network (faster R-CNN) is used to detect and count debris on the road. Finally presenting the results clearly during the calculation process and finally cleaning the visual path makes it easier for the city leaders to plan a good cleaning staff. The photo of Jiangning District Street in Nanjing, China was used to illustrate and illustrate the entire show. Practical application shows the feasibility and effectiveness of this method.