

Corrections to “Fast and Precise: Parallel Processing of Vehicle Traffic Videos Using Big Data Analytics”

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IN THE above article [1], the Abstract is incorrect. It should read as follows:

There is a lack of computing platforms to collect and analyze key data from traffic videos in an automatic and speedy way. Computer vision can be used in combination with parallel distributed systems to provide city authorities tools for automatic and fast processing of stored videos to determine the most significant driving patterns that cause traffic accidents while allowing to measure the traffic density. This study explores the integration of different tools such as parallel data processing, deep learning, and probabilistic models. We present an approach based on convolutional neural networks (CNNs) and Kalman filters to detect and track vehicles captured by traffic cameras. To speed up the analysis, we propose and evaluate a low-cost distributed infrastructure based on Hadoop and Spark

frameworks and comprised of multicore CPU nodes for data processing. Finally, we present an algorithm to allow vehicle counting while avoiding inaccuracies generated when videos are split to be distributed for analysis. We found that it is possible to rapidly determine traffic densities, identify dangerous driving maneuvers, and detect accidents with high accuracy using low-cost commodity cluster computing.

REFERENCES

- [1] J. C. Perafan-Villota, O. H. Mondragon, and W. M. Mayor-Toro, “Fast and precise: Parallel processing of vehicle traffic videos using big data analytics,” *IEEE Trans. Intell. Transp. Syst.*, early access, Sep. 8, 2021, doi: [10.1109/TITS.2021.3109625](https://doi.org/10.1109/TITS.2021.3109625).

Manuscript received 28 September 2021; accepted 28 September 2021.
Date of current version 9 August 2022. (Corresponding author: Juan C. Perafan-Villota.)

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Digital Object Identifier 10.1109/TITS.2021.3116636

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