World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:16, No:12, 2022

Cigarette Smoke Detection Based on YOLOV3

Authors : Wei Li, Tuo Yang

Abstract : In order to satisfy the real-time and accurate requirements of cigarette smoke detection in complex scenes, a cigarette smoke detection technology based on the combination of deep learning and color features was proposed. Firstly, based on the color features of cigarette smoke, the suspicious cigarette smoke area in the image is extracted. Secondly, combined with the efficiency of cigarette smoke detection and the problem of network overfitting, a network model for cigarette smoke detection was designed according to YOLOV3 algorithm to reduce the false detection rate. The experimental results show that the method is feasible and effective, and the accuracy of cigarette smoke detection is up to 99.13%, which satisfies the requirements of real-time cigarette smoke detection in complex scenes.

Keywords : deep learning, computer vision, cigarette smoke detection, YOLOV3, color feature extraction
Conference Title : ICNLP 2022 : International Conference on Natural Language Processing
Conference Location : Istanbul, Türkiye
Conference Dates : December 20-21, 2022