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A multi-target tracking algorithm for detecting motorcycling near misses**Rotimi-Williams Bello***University of Africa, Nigeria*

Statement of the problem: Commercial motorcycling is one of the economical means of transportation in many countries [2], although many perceive it as a dangerous means of transportation, which is affirmed by the number of casualties recorded daily [3]. This life threatening record has greatly hindered continuous support for commercial motorcycling as an affordable means of transportation [5]. Information retrieved from near miss datasets can be a telltale of potential hazards and their prevention [1]. However, many researchers have come up with different definitions for near misses, and this has created a gap in applying the right method to near misses [4], thereby making it statistically difficult to address the situation for a safer commercial motorcycling.

Methodology & theoretical orientation: A near miss detection framework based on deep learning and its models was proposed. Video streams of near miss datasets containing motorcycling in different scenes were collected for the experiment. YOLOv4-DeepSort [6] was employed for the detection and tracking tasks

Findings: The proposed method was evaluated by testing sequential video frames of motorcycling near miss incidents in urban environment, and approximately 96% recognition accuracy rate was achieved. Likewise, high precision and F1 score were achieved by the models with lower false-positive rates.

Conclusion: The results of the study indicate practicality for automatic detection of motorcycling near misses in urban environment, and it could assist in providing resourceful technical reference for analyzing the risk factors of motorcycling near misses.

Biography

Rotimi-Williams Bello holds a PhD in Computer Science with specialization in Vision and Image Processing from Universiti Sains Malaysia (USM). He has been working as a researcher and lecturer at the University of Africa, Bayelsa in Nigeria since 2018. He has published over 50 papers in reputable journals, book chapters and conference proceedings. He is a reviewer to some reputable journals such as IEEE Access, and Italian Journal of Animal Science (Taylor and Francis).