

Computer Vision Based Road Accident Classification from Traffic Surveillance

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Abstract : Traffic accidents stand as a leading cause of fatalities worldwide, significantly impacting global mortality rates. Accurate classification of road accidents through advanced technological solutions presents a crucial opportunity to revolutionize accident prevention and emergency response strategies. This paper presents an advanced deep-learning methodology customized for the classification of road accidents using CCTV surveillance footage. This real-time dataset, comprising approximately 18,000 frames, has been amassed, which is pivotal for enabling comprehensive research in this field. This substantial dataset is the foundation for these investigative efforts, providing a rich and diverse source for conducting an in-depth analysis of the features. It has achieved a remarkable accuracy of 97% on this dataset through the strategic utilization of transfer learning in conjunction with LSTM (Long short-term memory) techniques. This accomplishment underscores the efficacy of our approach, combining the strengths of transfer learning and LSTM models, resulting in a highly accurate classification system for road accident events.

Keywords : accident, CCTV, footage, long short-term memory, surveillance

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