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(57) Abstract :
Disclosed herein is an efficient two-stream LSTM-based system for violence detection (100) comprises a camera module (102) configured to continuously capture real-time video footage from a target environment. The system also includes a processing unit (104) includes a convolutional neural network (CNN) module, a Long Short-Term Memory (LSTM) network and a two-stream architecture. The system also includes an edge computing module (106), configured to locally execute said CNN and LSTM models to reduce latency and bandwidth usage, thereby enabling faster inference. The system also includes an Internet of Things (IoT)-based alert module (108), configured to generate and transmit real-time alerts upon detection of violent activity. The system also includes a software framework (110), for image preprocessing, model execution, and violence classification, and Flask for providing a web interface to manage alert notifications and system configuration.

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