

Abstract

Pedestrians are the most vulnerable traffic participants, and they are usually injured in road accidents. However, in the area of pedestrian surveillance, all of the image understanding and risk detection is left to human personnel. Observation for long duration of time and during time of less visibility, especially in the night is not well suited to humans, as it requires careful concentration over long periods of time. We propose a pedestrian detection system using image processing techniques. This aids a human user in the process of risk detection and analysis. The system uses HOG descriptor and SVM classifier for pedestrian detection. It is implemented using OpenCV on Raspberry Pi. It detects a pedestrian in the 15m range with dim lighting. Therefore, it proves to be a low-cost, generic and easily embedded prototype. The future scope of this prototype lies in Automatic Driver Assistance System for an enhanced driving experience as seen in luxury cars. The block diagram of the prototype is as shown in the figure 1.

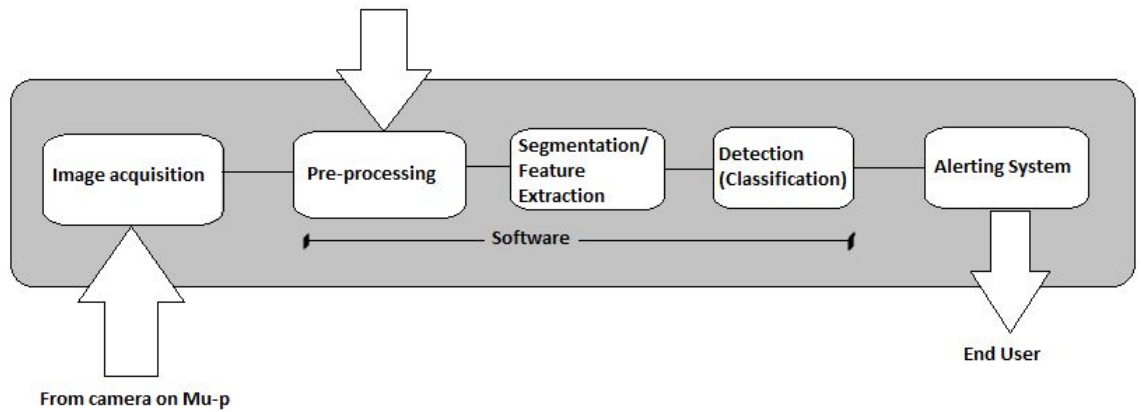


Figure 1 Block Diagram of the prototype