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# Gait Biometric for Person Re-Identification

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**Abstract :** Biometric identification is to identify unique features in a person like fingerprints, iris, ear, and voice recognition that need the subject's permission and physical contact. Gait biometric is used to identify the unique gait of the person by extracting moving features. The main advantage of gait biometric to identify the gait of a person at a distance, without any physical contact. In this work, the gait biometric is used for person re-identification. The person walking naturally compared with the same person walking with bag, coat, and case recorded using longwave infrared, short wave infrared, medium wave infrared, and visible cameras. The videos are recorded in rural and in urban environments. The pre-processing technique includes human identified using YOLO, background subtraction, silhouettes extraction, and synthesis Gait Entropy Image by averaging the silhouettes. The moving features are extracted from the Gait Entropy Energy Image. The extracted features are dimensionality reduced by the principal component analysis and recognised using different classifiers. The comparative results with the different classifier show that linear discriminant analysis outperforms other classifiers with 95.8% for visible in the rural dataset and 94.8% for longwave infrared in the urban dataset.

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