

Person Re-Identification using Siamese Convolutional Neural Network

Authors : Sello Mokwena, Monyepao Thabang

Abstract : In this study, we propose a comprehensive approach to address the challenges in person re-identification models. By combining a centroid tracking algorithm with a Siamese convolutional neural network model, our method excels in detecting, tracking, and capturing robust person features across non-overlapping camera views. The algorithm efficiently identifies individuals in the camera network, while the neural network extracts fine-grained global features for precise cross-image comparisons. The approach's effectiveness is further accentuated by leveraging the camera network topology for guidance. Our empirical analysis on benchmark datasets highlights its competitive performance, particularly evident when background subtraction techniques are selectively applied, underscoring its potential in advancing person re-identification techniques.

Keywords : camera network, convolutional neural network topology, person tracking, person re-identification, siamese

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