



# **Investigating Adaptive Multi-modal Approaches for Person Identity Verification Based on Face and Gait Fusion**

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## **Abstract**

With my thesis, I have established a novel human-identification scheme from long range face-gait profiles in surveillance videos. I investigated the role of multi view face-gait images acquired from multiple cameras, the importance of surveillance and visible range images in ascertaining identity, the impact of multimodal fusion, and efficient subspace features and classifier methods, and along with side face-ear biometric traits; the role of soft/secondary biometric (walking style) in enhancing the accuracy and robustness of the identification systems. An extensive, experimental evaluation of several subspace based side face-ear, gait feature extraction approaches and learning classifier methods on different datasets from publicly available databases (CASIA-China, Human Action Database- Sweden and UCMG Database-University of Canberra) has shown a significant improvement in recognition accuracy and robustness with multimodal fusion of multi-view face-ear, gait images from visible and infrared cameras acquired from different video surveillance scenarios.

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