Abstract

The major challenge of face detection techniques lies in handling varying poses, i.e., detection of faces in arbitrary in-depth rotations. The face image differences caused by rotations are often larger than the inter-person differences used in Rotation the research toward pose-invariant face recognition in recent years and many prominent approaches have been proposed. However, several issues in face recognition across pose still remain open. The aim of Rotation invariant multiview face detection (MVFD) is to detect faces with arbitrary rotation-in-plane (RIP) and rotation off-plane (ROP) angles in still images. MVFD is crucial as the first step in automatic face processing for general applications since face images are usually upright and frontal unless they are taken in cooperation with the person. This paper proposes a innovative methods to construct a high-performance rotation invariant multiview face detector. This multiview face detector reduces the computational complexity and has broad detection scope. The detection accuracy is high on the testing set of images. The existing techniques are discussed in detail and are compared with the proposed method. A new pose invariant face recognition system based on MBWM histogram matching is proposed. The classification is performed by using the Multiclass support vector machine of a test face and training faces in the database. The proposed system gives 98.80% recognition rate on the HP database of 15 face subjects.
References


**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

Face detection  
Pose variation  
LBPH  
SLBMH  
MBWMH  
SVM