



Pose Invariant Approach for Face Recognition at Distance

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Abstract:

We propose an automatic pose invariant approach for Face Recognition At a Distance (FRAD). Since face alignment is a crucial step in face recognition systems, we propose a novel facial features extraction model, which guides extended ASM to accurately align the face. Our main concern is to recognize human faces under uncontrolled environment at far distances accurately and fast. To achieve this goal, we perform an offline stage where 3D faces are reconstructed from stereo pair images. These 3D shapes are used to synthesize virtual 2D views in novel poses. To obtain good synthesized images from the 3D shape, we propose an accurate 3D reconstruction framework, which carefully handles illumination variance, occlusion, and the disparity discontinuity. The online phase is fast where a 2D image with unknown pose is matched with the closest virtual images in sampled poses. Experiments show that our approach outperforms the-state-of-the-art approaches.

Keywords:

Face Recognition, 3D Reconstruction,

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