Abstract

Making recognition more reliable under uncontrolled lighting conditions is one of the most important challenges for practical face recognition systems. This paper uses strengths of robust illumination normalization, local texture based face representations, distance transform based matching and multiple feature fusion to tackle this problem. The contributions of this paper include: 1) a simple and efficient pre-processing chain that eliminates most of the effects of changing illumination while still preserving the essential appearance details that are needed for recognition; 2) introduce local ternary patterns (LTP), a generalization of the local binary pattern (LBP) local texture descriptor that is more discriminant and less sensitive to noise in uniform region 3) improve robustness by adding Gabor wavelets and LBP—showing that the combination is considerably more accurate than either feature set alone. The resulting method provides state-of-the-art performance on Extended Yale-B dataset with an acceptance ratio of
85%. This can be used in many applications like surveillance, forensics, banking and login systems.

References

- D. Jobson, Z. Rahman, and G. Woodell, "A multiscale retinex for bridging the gap

Index Terms

Computer Science
Emerging Trends in Technology

Keywords

Face Recognition  Illumination Invariance  Image Pre-processing  Kernel Principal Components Analysis  Local Binary Patterns  Visual Features