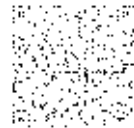


以多重最近特徵空間轉換進行 人臉辨識

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摘要

本研究所提出之多重最近特徵空間轉換法，其目的在進一步增強最近特徵空間轉換法保留區域拓樸資訊與一般化的能力，其具體作法是將點到點、點到線與點到面的向量同時考慮至共變異數矩陣的計算之中，如此構成的共變異數矩陣將可求得更佳的轉換矩陣。所謂更佳，意指此特徵空間將點到點、點到線與點到面的資訊皆保留下來，使所求得的特徵空間能夠投影到其中的樣本點，更具有一般性與代表性，如此可進一步降低人臉辨識中因姿勢、光線與表情所帶來的負面影響。

關鍵詞：一般性、人臉辨識、共變異數矩陣、拓樸資訊、最近特徵空間

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Face Recognition Using Multiple Nearest Feature Space Embedding

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Abstract

In this study, we propose a multiple nearest feature space embedding (MNFSE) for face recognition. The idea of the MNFSE is to take the point-to-point, point-to-line, and point-to-plane into the calculation of covariance matrix. Based on such covariance matrix, the obtained feature space can alleviate the problem of pose, illumination, and expression (PIE) in face recognition. On the other hand, since the distance between a point and the nearest feature point, nearest feature line (NFL) and nearest feature space (NFS) is simultaneously embedded in the discriminant analysis, the ability of topology preserving, and generalization is raised.

Keywords: generalization, face recognition, covariance matrix, topology information, nearest feature space

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