基于Gaussian-Hermite矩的指纹奇异点定位

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Abstract
This paper proposwork.In most fingerprint classification and identification algorithms, extracting the number and precise location of singular points (core and delta) is of great importance. In this paper, an adaptive algorithm for singular points detection is proposed, which is based on the behavior of Gaussian-Hermite moments. In order to detect singular point accurately, the distribution of Gaussian-Hermite moments of different orders of the fingerprint image in multiple scales is used. A PCA-based (principal component analysis) method is used to analyze the distribution of Gaussian-Hermite of fingerprint image. Experimental results show that the proposed algorithm is able to locate singular points in fingerprint with high accuracy.

摘要
在指纹分类和识别算法中,提取的奇异点(core点和delta点)数目和奇异点的准确位置是非常重要的.介绍了一种基于Gaussian-Hermite矩分布属性的自适应指纹奇异点定位方法,为了准确地确定奇异点,用到了指纹图像在多种尺度下的不同阶Gaussian-Hermite矩分布,并用一种基于主分量分析(principal component analysis,简称PCA)的方法分析指纹图像的Gaussian-Hermite矩分布.实验结果表明,该算法能够准确地确定奇异点位置.

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