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# Improving texture analysis performance in biometrics by adjusting image sharpness

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## Abstract

In this paper, a method to improve texture analysis performance in biometrics by adjusting image sharpness is presented. Images of high sharpness are usually considered as high quality data in texture analysis. Therefore, the imaging sensor and lens are carefully selected and calibrated in an image acquisition system in order to capture clear images. However, the results of our experiments show that the performance of texture analysis in biometrics can be improved by filtering clear images to lower sharpness. The experiments were conducted on the PolyU Palmprint Database using two algorithms (CompCode and POC), as well as on the CASIA Iris Database using IrisCode. In this paper, a filtering method using Gaussian filters is adopted to the images during the pre-processing stage to adjust the image sharpness. Results indicate that there is an optimal range of image sharpness and if all the images are filtered to this range, the performance of texture analysis on the whole dataset will be optimized. A scheme is also proposed to find the optimal range and to filter an image to the optimal range.

*Keywords:* Image Sharpness, Image Filtering, Texture Analysis, Palmprint Recognition, Iris Recognition

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