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Multi-scale local mapped pattern for spoof fingerprint detection

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In this talk, we will address the problem of detecting spoofings using image processing and pattern recognition techniques. Within this context, we have a widely used texture extractor, the Local Binary Pattern (LBP) proposed in 1996. In 2014, multi-scale versions of this method were presented, referred to as MSLBP (Multi-Scale Local Binary Pattern). In the same year the LMP (Mean Local Mapped Pattern) technique, equally based on LBP, was also introduced. These new techniques offered quite promising results. We will show a new technique joining both previous methods, that is, the LMP and the MSLMP, herein referred to as MSLMP (Multi-Scale Mean Local Mapped Pattern). The proposal of this new approach is to attenuate noisy actions often occurring in digital images with the use of applications in charge of smoothing high frequencies found in the neighborhood of a pixel. Forgeries are detected through the analysis of micropatterns extracted from fingerprint images. In the proposed method, the micropatterns are responsible for representing the most abstract features, which describe properties differing forged from genuine fingerprints. The experiments carried out so far suggest that the technique presented provides detections with higher performance than the results presented in the state-of-the-art research in the specialized scientific literature.

Biography

Ines Aparecida Gasparotto Boaventura is a Graduate at Mathematics from Sao Paulo State University, UNESP, Brazil and a Master at Computer Science and Computational Mathematics and PhD at Electrical Engineering from University of Sao Paulo (USP). She has experience in Computer Science, focusing on Graphical Processing (Graphics), and is acting on the following subjects: Biometrics, Image Processing, and Computer Vision. She is a Full-Time Professor and Head of the Department at Department of Computer Science and Statistics at UNESP, campus of Sao Jose do Rio Preto, Sao Paulo, Brazil. In 2011-2012, she was a Visiting Researcher at PRIP Laboratory –CSE –Michigan State University.

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