عنوان مقاله:

Use of the Shearlet Transform and Transfer Learning in Offline Handwritten Signature Verification and Recognition

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خلاصه مقاله:

Despite the growing growth of technology, handwritten signature has been selected as the first option between biometrics by users. In this paper, a new methodology for offline handwritten signature verification and recognition based on the Shearlet transform and transfer learning is proposed. Since, a large percentage of handwritten signatures are composed of curves and the performance of a signature verification/recognition system is directly related to the edge structures, subbands of shearlet transform of signature images are good candidates for input information to the system. Furthermore, by using transfer learning of some pre-trained models, appropriate features would be extracted. In this study, four pre-trained models have been used: SigNet and SigNet-F (trained on offline signature datasets), VGG۱۶ and VGG۱۹ (trained on ImageNet dataset). Experiments have been conducted using three datasets: UTSig, FUM-PHSD and MCYT-۷۵. Obtained experimental results, in comparison with the literature, verify the effectiveness of the presented method in both signature verification and signature recognition.

کلمات کلیدی:

Offline handwritten signature, Signature verification, Signature recognition, Shearlet transform, Transfer learning

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