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A Fused LBP Texture Descriptor-Based Image Retrieval System

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Abstract Texture analysis is critical in a variety of computer vision applications, including object recognition, defect detection on surfaces, pattern recognition, and medical picture analysis. The purpose of this research is to offer a novel method for content-based texture picture classification that is based on the discrete wavelet transformation and several texture properties. Three approaches (LBP, DWT, and Tamura) are combined to build an efficient hybrid function vector capable of extracting the finest texture information. The study extracts LBP and Tamura features in two methods, via wavelet transform and fusion, to create an effective hybrid texture feature vector. Experiments on the Brodatz and MIT-VisTex databases demonstrate that the proposed approach is more precise than a single feature texture algorithm and also than a combination of Tamura texture features and wavelet transform features. Additionally, the technique that employs an SVM classifier achieves a higher level of accuracy, up to 99%.

Keywords SVM · LBP · CBIR · Texture descriptor · Visual patterns · Tumara features

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CERTIFICATE OF APPRECIATION

This is to certify that Mr/Ms/Dr Akbar Khan of Nimra College of Engg., & Tech., Vijayawada, A.P., India has/have contributed a paper titled A fused LBP texture descriptor based image retrieval system in ICMEET 2022 held at Shri Vishnu Engineering College for Women (A), India. The paper has been selected for publication in the ICMEET-2022 conference proceedings by Springer Lecture Notes in Electrical Engineering (LNEE) Series subject to fulfilment of the guidelines issued by Springer. We wish the authors all the very best for future endeavors.

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