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Advances in Intelligent Systems and Computing

Volume 736, 2018, Pages 315-325

17th International Conference on Intelligent Systems Design and Applications, ISDA 2017; Delhi; India; 14 December 2017 through 16 December 2017; Code 212209

Fingerprint Image Enhancement Using Steerable Filter in Wavelet Domain(Conference Paper)

Jeyalakshmi, K.S., Kathirvalavakumar, T.

^aDepartment of Computer Science, N.M.S.S.Vellaichamy Nadar College (Autonomous), Madurai, 625 019, India^bResearch center in Computer Science, V.H.N.S.N. College (Autonomous), Virudhunagar, 626 001, India

Abstract

The proposed work is to enhance the features of the fingerprint image using steerable filter in wavelet domain to increase the accuracy and speed of Automatic fingerprint identification system. The proposed method uses steerable filter and wavelet. The steerable filter allows filtering process adaptively to any orientation and determining analytically the filter output as a function of orientation and the wavelet domain speeds up the computation process. The steerable filter is applied on each local blocks of approximation image of wavelet transform for tuning up the fingerprint image features and then smoothing the resultant which leads to enhanced image. Experiments are conducted on FVC databases and results show that enhancement process reveals clear visualization of fingerprint images. © 2018, Springer International Publishing AG, part of Springer Nature.

Author keywords

Fingerprint enhancement Multi-scale pyramid decomposition Orientation field Principal component analysis Steerable filter Wavelet transform

Indexed keywords

Engineering controlled terms:

Adaptive filtering Bandpass filters Biometrics Image compression Intelligent systems Principal component analysis Systems analysis Wavelet decomposition Wavelet transforms

Engineering uncontrolled terms

Automatic fingerprint identification systems Computation process Fingerprint enhancement Fingerprint image enhancement Fingerprint images Multi-Scale pyramids Orientation fields Steerable filters

Engineering main heading:

Image enhancement

Funding details

Funding sponsor	Funding number	Acronym
University Grants Commission		UGC

Funding text

Acknowledgement. This work is funded by University Grants Commission Research Project (MRP: F.No. 42-144/2013(SR)), New Delhi, INDIA

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
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ISSN: 21945357
ISBN: 978-331976347-7
Source Type: Book Series
Original language: English


DOI: 10.1007/978-3-319-76348-4_31
Document Type: Conference Paper
Volume Editors: Abraham A., Gandhi N., Muhuri P.K., Muda A.K.
Sponsors:
Publisher: Springer Verlag

 Kathirvalavakumar, T.; Research center in Computer Science, V.H.N.S.N. College (Autonomous), Virudhunagar, India;

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