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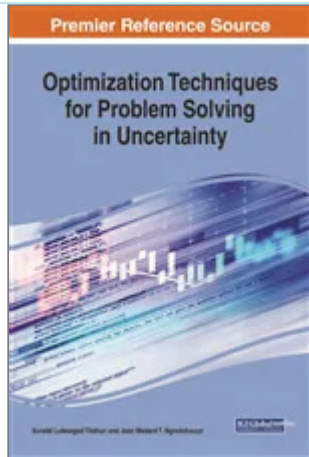
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Land Cover Classification Using the Proposed Texture Model and Fuzzy k-NN Classifier

Jenicka S. (Sethu Institute of Technology, India)

Source Title: Optimization Techniques for Problem Solving in Uncertainty (/book/optimization-techniques-problem-solving-uncertainty/186873)

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DOI: 10.4018/978-1-5225-5091-4.ch009

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Abstract

Texture feature is a decisive factor in pattern classification problems because texture features are not deduced from the intensity of current pixel but from the grey level intensity variations of current pixel with its neighbors. In this chapter, a new texture model called multivariate binary threshold pattern (MBTP) has been proposed with five discrete levels such as -9, -1, 0, 1, and 9 characterizing the grey level intensity variations of the center pixel with its neighbors in the local neighborhood of each band in a multispectral image. Texture-based classification has been performed with the proposed model using fuzzy k-nearest neighbor (fuzzy k-NN) algorithm on IRS-P6, LISS-IV data, and the results have been evaluated based on confusion matrix, classification accuracy, and Kappa statistics. From the experiments, it is found that the proposed model outperforms other chosen existing texture models.

Chapter Preview

Background

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Chapter 9

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Land Cover Classification Using the Proposed Texture Model and Fuzzy k-NN Classifier (/chapter/land-cover-classification-using-the-proposed-texture-model-and-fuzzy-k-nn-classifier/206636) (pages 226-261)

Jenicka S.

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Supply Chain Network Design in Uncertain Environment: A Review and Classification of Related Models (/chapter/supply-chain-network-design-in-uncertain-environment/206637) (pages 262-282)

Gholam Reza Nasiri, Fariborz Jolai

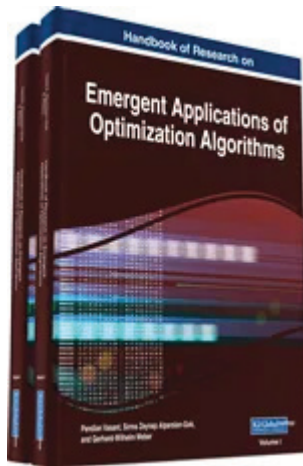
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Texture-Based Land Cover Classification Algorithm Using Hidden Markov Model for Multispectral Data ☒

Jenicka S (Anna University Chennai, India)

Source Title: Handbook of Research on Emergent Applications of Optimization Algorithms (/gateway/book/179325)

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Pages: 35

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Abstract

In this chapter, the concept of stochastic optimal control is well explored using hidden Markov model (HMM) in classifying land covers of remotely sensed images. The features of land covers can be colour, shape, and texture. Texture is a useful feature in land cover classification. A texture-based land cover classification algorithm using HMM has been proposed. The local derivative pattern (LDP) texture descriptor for gray level images has been extended as multivariate local derivative pattern (MLDP) for remotely sensed images in this chapter. Experiments were conducted on IRS P6 LISS-IV data and the results were evaluated based on the classification accuracy and compared against the three existing methods such as wavelet, MLDP and colour gray level co-occurrence matrix (CGLCM). The results indicate that the proposed algorithm achieves a classification accuracy of 88.75%.

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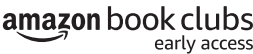
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 Article number 8593022 • 9th International Conference on Advances in Pattern Recognition, ICAPR 2017 • Bangalore • 27
 December 2017 through 30 December 2017 • Code 144137

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Source type

Conference Proceedings

ISBN

978-153862241-4

DOI

10.1109/ICAPR.2017.8593022

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Face Spoofing Detection using Binary Gradient Orientation Pattern with Deep Neural Network

Beham, M. Parisa^a ; Roomi, S. Md. Mansoor^b ; Jebina H.^c ; Kavitha M.^b

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^a ECE Department, Sethu Institute of Technology, Madurai, Tamilnadu, India^b ECE Department, Thiagarajar College of Engineering, Madurai, Tamilnadu, India^c ECE Department, Vickram College of Engineering, Madurai, Tamilnadu, India
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[Abstract](#)[Author keywords](#)[Indexed keywords](#)[SciVal Topics](#)[Metrics](#)**Abstract**

One of the challenging tasks in biometric authentication system is face spoofing attack. This paper presents an efficient and compact binary pattern based on gradient orientation with deep neural network for face liveness detection. To increase the discrimination power of the proposed feature, multi scale retinex (MSR) normalization technique has been applied on the raw face image. Gradients are computed from several orientations to obtain the essential gradient oriented binary patterns (BGOP) in the normalized face. Finally, we implement deep neural network to learn BGOP features of high discriminative ability in a supervised manner. Combining with the deep network, the proposed BGOP feature achieved good error detection rate on standard datasets. © 2017 IEEE.

Cited by 2 documents

Face Recognition for Attendance System using CNN based Liveness Detection

Potdar, A. , Barbhaya, P. , Nagpure, S.
(2022) 2022 International Conference on Advances in Computing, Communication and Materials, ICACCM 2022

A lite convolutional neural network built on permuted Xception-inception and Xception-reduction modules for texture based facial liveness recognition

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(2018) 2018 IEEE 4th International Conference on Identity, Security, and Behavior Analysis, ISBA 2018

On effectiveness of anomaly detection approaches against unseen presentation attacks in face anti-spoofing

Nikisins, O. , Mohammadi, A. , Anjos, A.
(2018) Proceedings - 2018 International Conference on Biometrics, ICB 2018

Detecting face presentation attacks in mobile devices with a patch-based CNN and a sensor-aware loss function

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Document type

Conference Paper

Source type

Conference Proceedings

ISBN

978-153864473-7

DOI

10.1109/ICBSII.2018.8524801

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DEXSIT: A Benchmark Database for BMD Measurement and Analysis

[Fathima, S.M.Nazia](#) ; [Tamilselvi R.](#) ; [Beham, M.Parisa](#)

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^a Sethu Institute of Technology, Department of CSE, Tamilnadu, 626115, India
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In the medical field, a bone mineral density (BMD) test is presented as a picture of your bone health. The test determines the risk for bone fractures of a human. From the test report one can identify the symptoms of osteopenia or osteoporosis disease which is the most common type of bone disease. The most extensively renowned BMD test is called a Dual-Energy X-ray absorptiometry, or DEXA test. The test can measure bone mineral density at spine, left and right femur bones. Superior properties of DEXA compared to conventional methods unveil the potential for new medical applications among the researchers. Thus it is mandatory to have a standard DEXA database for the researchers so as to take the treatments to the advance level by properly analyzing the clinical results of the scan images. The proposed DEXA database, named as DEXSIT, represents an initial attempt to provide a set of DEXA scan images of Anteroposterior (AP) spine, dual left and right femur bones. The database interprets all the clinical details such as age, weight, height, BMD level, T-score, Z-score and area of the bone part. In

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Diagnosis of Osteoporosis using modified U-net architecture with attention unit in DEXA and X-ray images

Nazia Fathima, S.M. , Tamilselvi, R. , Parisa Beham, M. (2020) *Journal of X-Ray Science and Technology*

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Nazia Fathima, S.M. , Tamilselvi, R. , Parisa Beham, M. (2019) *Biomedical and Pharmacology Journal*

Assessment of Bone Density by DXA in Poorly Controlled Children With β -Thalassemia: Correction for Hepatic Iron Overload by Manual Analysis

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Proceedings of the 2nd International Conference on Inventive Systems and Control, ICISC 2018 • Pages 456 - 461 • 27 June 2018 • 2nd International Conference on Inventive Systems and Control, ICISC 2018 • Coimbatore • 19 January 2018 through 20 January 2018 • Code 137536

Document type

Conference Paper

Source type

Conference Proceedings

ISBN

978-153860807-4

DOI

10.1109/ICISC.2018.8399114

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EMG activated robotic arm for amputees

[Tamilselvi R.](#); [Merline A.](#); [Parisa Beham M.](#); [Vijay Anand R.](#); [Shre Karthik M.](#); [Uthayakumar R.H.](#)
[Save all to author list](#)^a Department of ECE, Sethu Institute of Technology, Tamilnadu, India
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Amputation is the removal of limb by trauma, medical illness, or surgery. A transplant or prosthesis is the only option for recovering the loss. This issue can be solved by, measuring muscle activation via electric potential, referred to as electromyography (EMG), has traditionally been used for medical research and diagnosis of neuromuscular disorders. Our focus is on reproducing moving operations using non-invasive electromyogram signals. In this article the authors present a novel approach for developing a robotic arm for amputees based on raw EMG signal acquired from amputees. The main objective is to develop a Prosthesis that functions using the EMG signals generated in the own body of Amputees. The development of prosthetic arm includes Arduino microcontroller for two motions such as upper and down movement. Also the paper is extended in a microprocessor platform involving myRIO microprocessor of national instruments for accurate EMG signal acquisition and robotic arm movements. © 2018 IEEE.

Author keywords

Amputee; EMG signals; Prosthesis; Robotic arm

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An Architecture of Enhanced EMG Signal Classification based on Multi-Agent System

Jain, R. , Garg, V.K. (2022) *Proceedings of 3rd International Conference on Intelligent Engineering and Management, ICIEM 2022*

Classification of Electromyography Signal from Residual Limb of Hand Amputees

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The corresponding relationship research between human lower limb operation mode and muscle information

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Signal Condition and Acquisition System for a Low Cost EMG Based Prosthetic Hand

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Document type

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Conference Proceedings

ISBN

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DOI

10.1109/ITCOSP.2017.8303089

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Performance evaluation of various classification algorithms for the diagnosis of Parkinson's disease

[Jebakumari, V. Sutha^a](#) ; [Shanthi D.^b](#) ; [Sridevi S.^c](#) ; [Meha P.^a](#)
[Save all to author list](#)^a Dept of Computer Science and Engg, Kamaraj College of Engineering and Technology, Virudhunagar, India^b Dept of Computer Science and Engg, PSNA College of Engineering and Technology, Dindigul, India^c Dept of Computer Science and Engg, Sethu Institute of Technology, Kariapatti, India
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The continual increase in Parkinson's Disease (PD) has made the analysis of PD an important issue in the medical field. Studies have been done for PD diagnosis with both Electro Myography (EMG) and Speech Signals. This paper presents various methods of classification for efficient diagnosis of Parkinson's disease using EMG signal. Three different classification methods were applied and a comparative study was carried out. They are Neural Network (NN), Naive Bayes and Logistic Regression respectively. Different evaluation criteria were applied for calculating the performance of these classifiers. It was found that the classification accuracy is the best for Naive Bayes Classifier. © 2017 IEEE.

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A Systematic Review of Artificial Intelligence (AI) Based Approaches for the Diagnosis of Parkinson's Disease

 Saravanan, S. , Ramkumar, K. , Adalarasu, K. (2022) *Archives of Computational Methods in Engineering*

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 Chen, L. , Ai, Q. , He, Y. (2012) *ICALIP 2012 - 2012 International Conference on Audio, Language and Image Processing, Proceedings*

EMG signal classification by extreme learning machine | EMG sinyallerinin agiri öğrenme makinesi ile siniflandırılması

 Ertugrul, Ö.F. , Emin Tagluk, M. , Kaya, Y. (2013) *2013 21st Signal Processing and Communications Applications Conference, SIU 2013*
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Journal

ISSN

22147853

DOI

10.1016/j.matpr.2018.06.373

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Impact Response and Damage Characteristics of Carbon Fibre Reinforced Aluminium Laminates (CARAL) under Low Velocity Impact Tests

[Rajan, B.Muthu Chozha^a](#) ; [Kumar A.^a](#); [Sornakumar T.^b](#); [Kumaar, A.Saravana^a](#)

[Save all to author list](#)^a Department of Mechanical Engineering, Sethu Institute of Technology, Pulloor Tamilnadu, 626 115, India^b Department of Mechanical Engineering, Thiagarajar College of Engineering, Madurai Tamilnadu, 625015, India

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This paper investigates impact response of a novel fibre metal laminate (FML) system based on a carbon fibre reinforced Aluminium Laminates (CARAL). These composites are fabricated using hand lay-up technique and the detailed preparation methodology was presented. Epoxy resin along with TETA hardener was used as the excellent adhesion agent throughout the layer. Three types of layers were prepared from CARAL and machined as per ASTM Standard. Low velocity impact response and damage characteristics of CARAL specimens were studied. Damage characteristics were evaluated using drop weight impact tester. Impact properties of CARAL were increased with the increase in

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Impact Behaviour of Nano-Hybrid (Carbon/Glass) Fibre Metal Laminates: An Experimental Study

Kali, N. , Korla, R. , Korla, S. (2023) *Arabian Journal for Science and Engineering*

Influence of constitutive metal model on the numerical prediction of the impact behaviour of titanium-based Fibre Metal Laminates

Podolak, P. , Jakubczak, P. , Bienias, J. (2022) *International Journal of Impact Engineering*

Comparative Study of Shape Memory Alloy Reinforced Kevlar Polymer Composite in Sheet and Wire Form with Plain Kevlar Polymer Composite

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