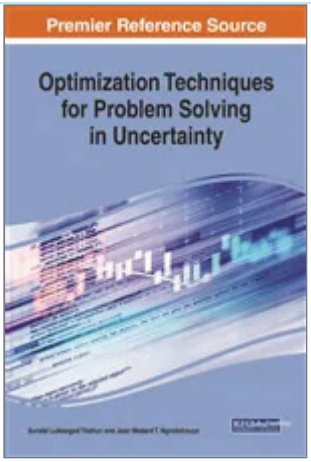
CRITERION 3 Research, Innovations and Extension	3.4 Research Publications and Awards
3.4.4 Number of books and chapters in edited volumes/books published per teacher during last five years	

Books and Chapters in edited volumes/books published and papers in national/ international conference proceedings

2018-2019



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)

Pages: 36

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

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.

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Background

Chapter 9 **$37.50**

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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Chapter 10 **$37.50**

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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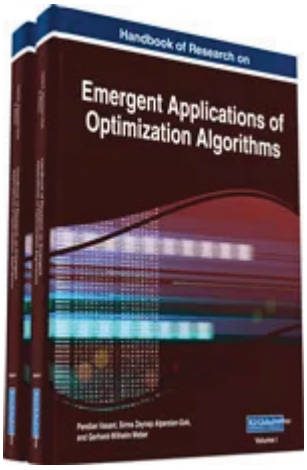


Texture-Based Land Cover Classification Algorithm Using Hidden Markov Model for Multispectral Data ⊗

Jenicka S (Anna University Chennai, India)

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

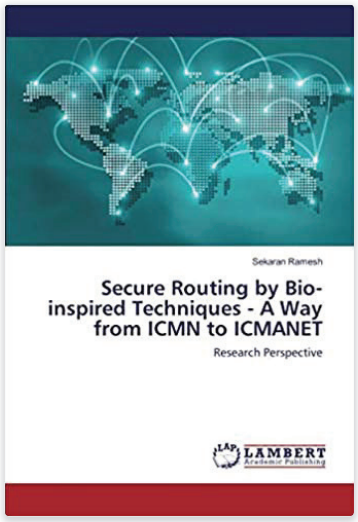
Pages: 35

ISBN13: 9781522529903ISBN10: 152252990XEISBN13: 9781522529910

DOI: 10.4018/978-1-5225-2990-3.ch025

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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The Mobile Network has a set of nodes that are dynamic in nature. Here the nodes tend to move in a random manner at any instant of time. The mobile network leads to temporary topology network called Mobile Adhoc Network (MANET). The mobile networks or MANETs may be disconnected or partially connected and this type of network is called intermittently connected networks (ICN). An intermittently connected network is a form of Delay Tolerant Network (DTN), where there never exists a complete end – to – end path between two nodes wishing to communicate. The intermittent connectivity arises when a network is sparse or highly mobile. Routing in such a spasmodic environ is arduous. The scope of this research extends to the work of approaching an improved routing technique for such disconnected networks. The intermittent nature subsists in both mobile and mobile adhoc networks. The intermittent connectivity in mobile networks is called an Intermittently Connected Mobile Networks (ICMN) and in MANET, it is called an Intermittently Connected Mobile Adhoc Networks (ICMANET).

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Print length	Language
224 pages	**English**

Product details

Publisher : LAP LAMBERT Academic Publishing (January 9, 2018)

Language : English

2017 9th International Conference on Advances in Pattern Recognition, ICAPR 2017 • Pages 251 - 256 • 27 December 2018 • Article number 8593022 • 9th International Conference on Advances in Pattern Recognition, ICAPR 2017 • Bangalore • 27 December 2017through 30 December 2017 • Code 144137

Document type
Conference Paper

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

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[c] ECE Department, Vickram College of Engineering, Madurai, Tamilnadu, India

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 liveliness 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.

Proceedings of the 4th International Conference on Biosignals, Images and Instrumentation, ICBSII 2018 • 5 November 2018 • Article number 8524801 • 4th International Conference on Biosignals, Images and Instrumentation, ICBSII 2018 • Chennai • 22 March 2018through 24 March 2018 • Code 142165

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

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Abstract

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

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 2018through 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

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Abstract

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 my-RIO microprocessor of national instruments for accurate EMG signal acquisition and robotic arm movements. © 2018 IEEE.

Author keywords

Amputee; EMG signals; Prosthesis; Robotic arm

Proceedings of the 2017 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing, INCOS 2017 • Volume 2018-February, Pages 1 - 7 • 26 February 2018 • 2017 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing, INCOS 2017 • Tamil Nadu • 23 March 2017through 25 March 2017 • Code 135012

Document type
Conference Paper

Source type
Conference Proceedings

ISBN
978-150904777-2

DOI
10.1109/ITCOSP.2017.8303089

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

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[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

Abstract

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.

Materials Today: Proceedings • Volume 5, Issue 9, Pages 20070 - 20077 • 2018 • 8th International Conference on Materials Processing and Characterization, ICMPC 2018 • Hyderabad • 16 March 2018through 18 March 2018 • Code 140097

Document type
Conference Paper

Source type
Journal

ISSN
22147853

DOI
10.1016/j.matpr.2018.06.373

View more

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

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Abstract

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