

(Modified PCA speaker identification based system using wavelet transform and neural networks)

الذي نُشر في مجلة :

(International Journal of Recent Trends in Engineering)

Vol 2, No. 5, November 2009

ملخص البحث:

This work investigates to improve the robustness of the speaker identification systems based on a modified version of principal component Analysis (PCA) and Continuous Wavelet Transform (CWT). Therefore this work proposes a robust feature extraction method based on MPCA instead of Mel Frequency Cepstral Coefficient (MFCC) that is used in the literature, Which is based on converting the common Eigen matrix from two dimensional into a one dimensional one. A simulation program has been built to proof the given mathematical model for the proposed work. At a certain SNR level of the CWT (6dB) the achieved improvement in the classification process was approximately 7.3% (85-92.3%) over the previously published work that based on the MFCC with CWT.

الدكتور عمر داود

(Paper reduction by linear coding techniques for MIMO – OFDM System Performance Improvement: Simulation and Hardware implementation)

الذي نُشر في مجلة :

(European journal of scientific research)

ISSN 1450-216X Vol.36 No.3 (2009), PP 376-393

ملخص البحث:

In this paper, a Low-Density-Parity Check (LDPC) encoder is used to effectively reducing Peak to Average Power Ratio (PAPR) problem in Orthogonal Frequency Division Multiplex technology (OFDM) which is the one behind modern handheld television. In addition the Multiple-Input Multiple-Output (MIMO) antennas technology is implemented to solve reception problem, and to further improve the performance of the system.

This paper shows that the efficiency of the previously published PAPR reduction techniques has improved when using a powerful error correcting codes. Two different linear codes have been used to examine MIMO-OFDM systems performance; low density parity check (LDPC) and convolutional encoding.

The proposed technique shows better reduction performance compared to the previously proposed techniques which combat the PAPR, such as Selective mapping, Golay sequences, Cyclic coding, clipping and filtering; and multiple signal representation. Our simulation results show that 70% reduction in PAPR over current values in the Literature can be achieved depending on the system type. Moreover, the designed LDPC Shows a performance near to that of the Quasi-cyclic LDPC codes in the literature.

(MIMO- OFDM – Based Robotic Mobile System's Performance Analysis)

الذي نُشر في مجلة :

(International Journal of Interactive Mobile Technologies)

Vol 3 (2009)

ملخص البحث:

In this paper, a predistortion neural network (PDNN) architecture has been imposed to the Sniffer Mobile Robot (SNFRbot) that is based on spatial multiplexed wireless Orthogonal Frequency Division Multiplexing (OFDM) transmission technology. This proposal is used to improve the system performance by combating one of the main drawbacks that is encountered by OFDM technology; Peak-to-Average Power Ratio (PAPR). Simulation results show that using PDNN resulted in better PAPR performance than the previously published work that is based on linear coding, such as Low Density Parity Check (LDPC) codes and turbo encoding whether using flat fading channel or a Doppler spread channel.

الدكتور علي توفيق الخوالده

(Using an Adaptative Fuzzy – Logic System to Optimize the Performance and the Reduction of Chattering Phenomenon in the Control of Induction Motor)

الذي نُشر في مجلة :

(Motor / A.J of Applied Sciences)

Vol. 6, No. 2, November 2009, 267-284

ملخص البحث:

Neural networks and fuzzy inference systems are becoming well recognized Tools of designing an identifier/controller capable of perceiving the operating environment and imitating a human operator with high performance. Also, by combining these two features, more versatile and robust models, called "neuro-fuzzy" architectures have been developed. The motivation behind the use of neuro-fuzzy approaches is based on the complexity of real life systems, ambiguities on sensory information or time-varying nature of the system under investigation. In this way, the present contribution concerns the application of neuro-fuzzy approach in order to perform the responses of the speed regulation and to reduce the chattering phenomenon introduced by sliding mode control, which is very harmful to the actuators in our case and may excite the un modeled dynamics of the system. The type of the neuro-fuzzy system used here is called: " adaptive neuro fuzzy inference controller (ANFIS)". This neuro-fuzzy is destined to replace the speed fuzzy sliding mode controller after its training process. Simulation results reveal some very interesting features.

Keywords: Nonlinear feedback control, Sliding mode control, Adaptive neuro fuzzy inference system, ANFIS, Induction motor.

(The stabilization of AC voltage: the need for stabilization special feature, some design aspects)

الذي نُشر في مجلة :

(International Journal of Recent Trends in Engineering)

Vol 2, No. 5, November 2009

ملخص البحث:

Even with the fluctuations in the network voltage the AC voltage level at the customer terminals must maintain stable. The stabilization process offers a compensation holding the output voltage to protect the main equipments. This paper presents the merits of discrete stabilization as compared to phase and two- level voltage regulation. This paper proposes using of more complex block to the multi – block discrete stabilizer in order to increase the number of steady states , and consequently , decreasing the error in voltage regulation for the customer mains.

الدكتور عبد الرحمن القواسمي

(An OFDM free Access technique using gold sequence)

الذي نُشر في مجلة :

(European journal of scientific research)

ISSN 1450-216X Vol.37 No.4 (2009), pp.552-560

ملخص البحث:

In this paper, the Orthogonal Frequency Division Multiplexing – Free Access Technique (OFDM – FAT) system's performance is checked over two different channels using Gold sequenced input data. This performance is checked through the BER investigation of an OFDM system – based BPSK and 16QAM modulation techniques. The overall system is simulated to analyse the system's performance. it shows that ...

الدكتور وائل حسن محمد السوالمة

(The Use of Wavelets in Speaker Feature Tracking Identification System)

الذي نُشر في مجلة :

(Using Neural Network WSEAS Transaction on Signal Processing)

Issue 5, Volume 5, May 2009

ملخص البحث:

Continuous and Discrete Wavelet Transform (WT) are used to create text-dependent robust to Noise speaker recognition system. In this paper we investigate the accuracy of identification the speaker identity In non- stationary signals. Three methods are used to extract the essential speaker features based on Continuous, Discrete Wavelet Transform and Power Spectrum Density (PSD). To have better identification rate, two types of Neural Networks (NNT) are studied: The first is Feed Forward Back Propagation Neural Network (FFBNN) and the second is perceptron. Up to 98.44% identification rate is achieved. The presented system depends on the multi-stage features extracting due to its better accuracy. The multistage features tracking based system shows good capability of features tracking for tested signals with SNR equals to -9 dB using Wavelet Transform, which is suitable for non-stationary signal.

(Speaker Identification System – based Mel Frequency and Wavelet Transform Using Neural Network Classifier)

الذي نُشر في مجلة :

(European Journal of Scientific Research)

ISSN 1450-216X Vol.41 No.4 (2010) ,PP.515-525

ملخص البحث:

In The robustness to noise in speaker identification systems is improved by applying Continuous Wavelet Transform (CWT). In this work. Essential speaker features are extracted using Mel frequency Cepstral Coefficients (MFCC) and CWT for speech signals. In order to classify extracted features, a Feed Forward Back Propagation Neural Network (FFBNN) is Imposed since it gives better classification accuracy over conventional methods. A simulation program used to test the performance of the proposed conventional methods. A simulation program used to test the performance of the proposed method at certain level of SNR (- 6dB) , showed a classification ratio equal 99.7%

الدكتور خالد توفيق عمر دقروق

(Wavelet Formants Speaker Identification based System Via Neural Network)

الذي نُشر في مجلة :

(International journal of recent trends in engineering "ISSN 1797 – 9617")

Vol 2, No. 5, November 2009

ملخص البحث:

In this paper Discrete wavelet Transform with logarithmic Power Spectrum Density (PSD) are combined for speaker formants extraction, to be used as evident classification features. For classification, Feed Forward Back Propagation Neural Network FFBNN method is proposed. The Discrete Wavelet formants Neural Network DWFNNT system works with excellent capability of features tracking even with 0dB SNR. Text - dependant system is Used, so that the system can be applied in password or PINs identification in any security system. The proposed system is compared with K-means algorithm based clustering method. The results show excellent performance with 93.21% Recognition Rate (RR).

(K- Mean Clustering and Arabic Vowels Formants Based Speaker Identification System)

الذي نُشر في مجلة :

(European Journal of Scientific Research)
ISSN 1450-216X Vol.42 No.3 (2010) , PP.420-417

ملخص البحث:

This paper introduces and addresses the proposes of a new approach for speaker Feature extraction based on experimental and theoretical approached, where the formants of Arabic Vowels are proposed to distinguish the speaker features from each other. Discrete Wavelet Transform (DWT) in conjunction with Algorithmic Power Spectrum Density (PSD) is used to illustrate the distinguisher of different speaker formants. This approach provides a more efficient method in speaker recognition rate, i.e., higher accuracy. Kmeans clustering (KC) and Root Mean Square Difference Similarity Measure (RDSM) are used for features classification. Instead the conventional method extracts the features from one word or more. In this paper the authors proposed a new method to utilize the Arabic Vowels. Ultimately, the attained results by the presented method showed considered a performance in classification, which reaches about 94% in classification rate. As a result of DWT utilization, the system works with considerable capability of features tracking even with 0dB SNR

Key Words: Speaker Identification, Arabic Vowels, Wavelets, Clustering. .

(Spoken Arabic Digits Classifier via Sophisticated Wavelet Transform Features Extraction Method)

الذي نُشر في مجلة :

(International Journal of Information Science and Computer Engineering)
Vol. 1, No. 1, (2010) 16–25

ملخص البحث:

The essential problem of Arabic recognition systems is the several of Arabic language dialects, especially along with associated noise. Therefore, low recognition rate is encountered, as a result of such an environment. In this research paper, the authors presented dialect-independent via sophisticated wavelet transform-based Arabic digits classifiers (SWADC). The proposed classifier is divided into three main blocks: 1) Filtration and widowing. 2) Sophisticated Features Extraction Method by combining Continuous Wavelet Transform (CWT) with Linear Prediction Coefficient (LPC) and Mel Frequency Cepstral Coefficient (MFCC). 3) Classification by Root Mean Square Difference Similarity Measure (RDSM) and Feed Forward Back Propagation Neural Network Classification (FFBPNC). The proposed classifier provided a high Recognition Rate reaches up to 100%, in some cases, and an average cases up to 95.9%, for about 450 tested individual digits, based on speaker-independent system.

كلية الهندسة

الدكتور محمد شريف

(Wavelet Packet and Modular Arithmetic for Text-Independent Speaker Identification)

الذي نُشر في مجلة:

(European Journal of Scientific Research)

ISSN 1450-216X Vol.66 No.2 (2011), pp. 195-206

ملخص البحث:

In the present work, the techniques of wavelet transform (WT) with modular Arithmetic and neural network were developed for speech based text-independent speaker identification. The number of repeating the remainder applied for a speech signal with wavelet packet (WP) upon level three features extraction method was developed. 266 features fed to probabilistic neural network (PNN) for classification. The functions of features extraction and classification are performed using the modular arithmetic, wavelet packet and neural networks (MWPPN) expert system. The declared results show that the proposed method can make an effectual analysis with average identification rates reached 88.69. Four published methods were investigated for comparison. The best recognition rate selection obtained was for MWPPN.

Keywords: Speech; Text-independent, Wavelet; Modular arithmetic; Neural Network.

الدكتور خالد دقروق

(Arabic Vowels Recognition Based on Modular Arithmetic and Wavelet Packet using Neural Network)

الذي نُشر في مجلة:

(Journals of Emerging Trends in Engineering and Applied Sciences (JETEAS))

April,2011

ملخص البحث:

In the present study, the techniques of wavelet packet transform (WPT) with modular arithmetic and neural network were developed for Arabic vowels recognition. The number of repeating the remainder applied for a speech signal with wavelet packet (WP) upon level three features extraction method was developed. 266 features fed to probabilistic neural network (PNN) for classification. The functions of features extraction and classification are performed using the modular arithmetic, wavelet packet and neural effectual analysis with average identification rates reached 88.69, Four published methods were investigated for comparison. The best recognition rate selection obtained was for MWNN.

Keywords: Speech, Arabic vowel, wavelet, Modular arithmetic, Neural Network.

(New Analysis to Measure the capacitance and Conductance of
MOS Structure toward Small Size of VLSI Circuits)

الذي نُشر في مجلة:

(Scientific Research, Circuits and System, 2011)

doi:10.4236/cs.2011.23022 Published Online July 2011

ملخص البحث:

In this research thin film layers have been prepared at alternate layers of resistive and dielectric deposited on appropriate substrates to form four - terminal R-Y-NR network. If the gate of the MOS structures deposited as a strip of resistor film like NiCr, the MOS structure can be analyzed as R-Y-NR network. A method of analysis has been proposed to measure the shunt capacitance and the shunt conductance of certain MOS samples. Mat lab program has been used to compute shunt capacitance and shunt conductance at different frequencies. The results computed by this method have been compared with the results obtained by LCR meter method and showed perfect coincident with each other.

Keywords: Thin Film R-Y-NR Network, MOS R-Y-NR Network, MOS-VLSI Circuits, MOS Capacitance

الدكتور عماد خلف

(Wavelet Packet and Percent of Energy Distribution with Neural Networks Based
Gender Identification System)

الذي نُشر في مجلة:

(Journal of Applied Sciences 11(16): 2940-2946, 2011)

ISSN 1812-5654/DOI:10.3923/jas.2011.2940.2946

ملخص البحث:

This research presents the study of gender identification for security systems based on the energy of speaker utterances. The proposed system consisted of a combination of signal pre-process, feature extraction using Wavelet Packet Transform (WPT) and gender identification using artificial neural network. In the signal pre-process, the amplitude of utterances was normalized for preventing an error estimation caused by speakers change in volume. 128 features fed to Feed Forward Back propagation Neural Networks (FFPBNN) for classification. The functions of features extraction and classification are performed using the Wavelet Packet and Percent of Energy Distribution and Neural Networks (WPENN) expert system. The declared results showed that the proposed method can make an effectual analysis with average identification rates reached 91.09. Two published methods were investigated for comparison. The best recognition rate selection obtained was for WPENN. The proposed method can offer a significant computational advantage by reducing the dimensionality of the WP coefficients by means of percent of energy distribution. Discrete Wavelet Transform (DWT) was studied to improve the system robustness against the noise of -2 dB. DWT approximation Sub-signal through several levels instead of original imposter had good performance on Additive White Gaussian Noise (AWGN) facing, particularly upon level 4.

Keywords: wavelet ; energy ; formants ; neural network ; Speech ; gender

(Modular Arithmetic and Wavelets for Speaker Verification)

الذي نُشر في مجلة :

(Journal of Applied Sciences 11(15): 2782-2790,2011)

ISSN 1812-5654/DOI: 10.3923/jas.2011.2782.2790

ملخص البحث :

The aim of this study is to concentrate on optimizing dimensionality of feature space by selecting the number of repeating the remainder (modular arithmetic) applied for a speech signal with Wavelet Packet (WP) upon level three features extraction method. The functions of features extraction and classification were performed using the modular arithmetic, wavelet packet and three verification functions (MWVS) expert system. This was accomplished by decreasing the number of feature vector elements of individual speaker obtained by using modular arithmetic and wavelet packet method (MWM) (285 elements). To investigate the performance of the proposed MWVS method, two other verification methods were proposed: Gaussian mixture model based method (GMMW) and K-Means clustering based method (KMM). The results indicated that a better verification rate for the text-independent system was accomplished by MWVS and GMMW. Better result was achieved (91.36%) in case of the speaker-speaker verification system. In case of white Gaussian noise (AWGN), it was observed that the MWVS system is generally more noise-robust in case of using approximate discrete wavelet transform sub-signal instead of the original signal. The system works in real time. This was performed by the recording apparatus and a data acquisition system (NI-6024E) and interfacing online with Matlab code that simulates the expert system. A major contribution of this study is the development of a less computational complexity speaker verification system with modular arithmetic capable of dealing with abnormal conditions for relatively good degree.

Key words: gaussian noise ; K-Means ; gaussian mixture ; modular arithmetic ; Wavelet ; speech signal

(The Effects of Fabrication Parameters and Electroforming Phenomenon on CdTe/Si
(p) Heterojunction Photovoltaic Solar Cell)

الذي نُشر في مجلة:

(Circuits and Systems)

Vol. 3 No. 1, 2012, pp. 42-47. doi: 10.4236/cs.2012.31007

ملخص البحث :

The In-doped CdTe/Si (p) heterostructure was fabricated and its electrical and photoelectrical properties were studied and interpreted. During the fabrication processes of CdTe/Si heterojunction, some practical troubles were encountered. However, the important one was the formation of the SiO₂ thin oxide layer on the soft surface of the Si during the formation of the back contact. The silicon wafer was subjected to different chemical treatments in order to remove the thin oxide layer from the silicon wafer surfaces. It was found that the heterojunction with Si (p⁺) substrate gave relatively high open circuit voltage comparing with that of Si (p) substrate. Also an electroforming phenomenon had been observed in this structure for the first time which may be considered as a memory effect. It was observed that there are two states of conduction, non-conducting state and conducting state. The normal case is the non-conducting state. As the forward applied voltage increased beyond threshold value, it switches into the conducting state and remains in this state even after the voltage drops to zero.

Keywords: CdTe Solar Cells, CdTe/Si Heterojunction, In – Doped CdTe.

(Computing Density Profile and Square End To End Distance of Protein
Using MS Visual Studio C++)

الذي نُشر في مجلة:

(Journal of Applied Sciences 12 (9): 809-821,2012)

ISSN: 1812-5654/ DOI:10.3923/jas.2012.809.821

ملخص البحث:

This study modified and examined an intensive numerical model adopted from a previous study of the peptide-lipid system to study more complex proteins. The density profile $\rho(z)$ as well as the mean square end to end distance $R(z)$ of the protein near the cell membrane interface have been computed by using the programming language MS Visual Studio C++ based on the Green's function technique. The study discussed the analytical modifications and its corresponding verification, the results and chart discussions were illustrated and compared with those of literature. This study addressed that the asymmetry of the composition plays an important role in determining the character of the behavior of the peptide chain at interfaces, increasing the value of χ makes distribution narrower and vice versa and the statistical weight (G) of this system is proportional to the number of conformations of the protein chain with ends fixed at z and z_0 . The model can be used in predicting the experimental results with sufficient accuracy for the same computed values.

Keywords: density profile $P(z)$; mean square end-to-end $R(z)$; GUI ; MS Visual Studio C++

(Self-Organizing Map Weights and Wavelet Packet Entropy for
Speaker Verification)

الذي نُشر في مجلة:

(Journals of Emerging Trends in Engineering and Applied
Sciences (JETEAS))

Issue 1, Volume 6, 2012

ملخص البحث :

With the growing trend toward distant security verification systems for telephone banking, biometric security measures and other remote access applications, Automatic Speaker Verification (ASV) has attracted a great attention in recent years. The complexity of ASV system and its verification time depends on the number of feature vector elements. Therefore, in this paper, we concentrate on optimizing dimensionality of feature space by selecting the weights of Self-Organizing Map (WSOM) Neural Network (NNT) for text-independent speaker verification system. This is accomplished by decreasing the number of feature vector elements of individual speaker obtained by using wavelet packet (WP) Shannon, Sure, and log energy in conjunction with energy indices (1020 elements) to 64 elements by WSOM. To investigate the performance of the proposed WSOM and wavelet packet entropies (SOMWPE) method, two other verification methods are proposed: Gaussian mixture model based method (GMMWPE) and K-Means clustering based method (KMWPE). The results indicated that a better verification rate for the speaker-speaker system was accomplished by SOMWPE. Better result was achieved (94.34%) in case of the speaker-imposter verification system. In case of white Gaussian noise (AWGN), it was observed that the SOMWPE system is generally more noise-robust than GMMWPE and KMWPE systems.

Keywords—About four key words or phrases in alphabetical Order, separated by commas.

(Power Conversion Enhancement of CdS/CdTe Solar Cell Interconnected with Tunnel Diode)

الذي نُشر في مجلة:

(Circuits and Systems)

2012, 3, 230-237 doi:10.4236/cs.2012.33032 Published Online July 2012

(<http://www.SciRP.org/journal/cs>)

ملخص البحث :

One of the most promising solar cell devices is cadmium telluride (CdTe) based. These cells however, have their own problems of stability and degradation in efficiency. Measurements show that CdS/CdTe solar cell has high series resistance which degrades the performance of solar cell energy conversion. Both active layers (CdS and CdTe) had been fabricated by thermal evaporation and tested individually. It was found that CdS window layer of 300 nm have the low-est series resistance with maximum light absorption. While 5 - 7 μm CdTe absorber layer absorbed more than 90% of the incident light with minimum series resistance. A complete CdS/CdTe solar cell was fabricated and tested. It was found that deposited cell without heat treatment shows that the short circuit current increment decreases as the light intensity increases. This type of deposited cell has low conversion efficiency. The energy conversion efficiency was improved by heat treatment, depositing heavily doped layer at the back of the cell and minimizing the contact resistivity by depositing material with resistivity less than $1 \text{ m}\Omega\cdot\text{cm}^2$. All these modifications were not enough because the back contact is non-ohmic. Tunnel diode of CdTe (p++)/CdS (n++) was deposited in the back of the cell. The energy conversion efficiency was improved by more than 7%.

Keywords: CdS/CdTe; Solar Cells; Energy Conversion; Efficiency.