# Practical Guide to Distributed Systems in MPI

Dr. Latesh Malik, Dr. Sandhya Arora,Dr. Urmila Shrawankar

About Book:This book demonstrates the practical implementation of distributed systems by using the recent open source compilers and environments. Faculties and students can use this book as laboratory manual for distributed operating system.
Message Passing Interface (MPI) is a standardized and portable message-passing system developed for distributed and parallel computing. MPI gives user the flexibility of calling set of routines from C, C++, Fortran, C#, Java or Python. The advantages of MPI over older message passing libraries are portability and speed.

Practical implementations are mostly in MPI but few practical are in C++, JAVA. It covers all details from implementations (coding) to the results (outputs) clearly. JAVA RMI, CORBA examples are also covered. Hadoop implementations and commands on HDFS are covered to learn distributed file system.

About Authors

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She is currently working as Associate Professor& Head of Department in Department of Computer Science & Engineering at Government College of Engineering, Nagpur, MS, India. She is working under RTM Nagpur University since 2002 and total teaching experience is 20 years.

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She is currently working as Professorin Department of Computer Engineering at Cummins college of Engineering for Wo
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Dr. Urmila Shrawankar

Urmila Shrawankar completed her Ph.D. degree in Computer Sci & Engg from SGB Amravati University and M.Tech. degree in Computer Sci & Engg from RTM Nagpur university. She is presently working as Associate Prof. in CSE Dept, G H Raisoni College of Engineering, Nagpur, India.

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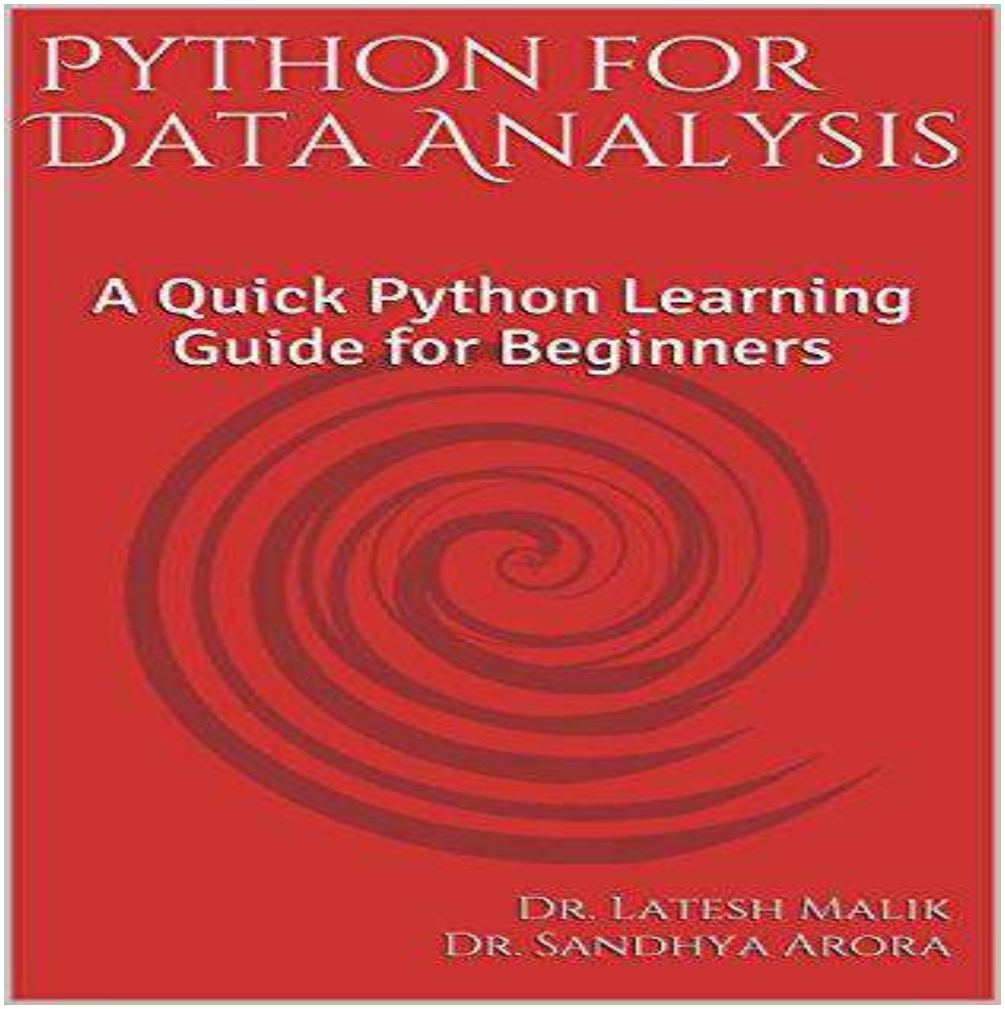
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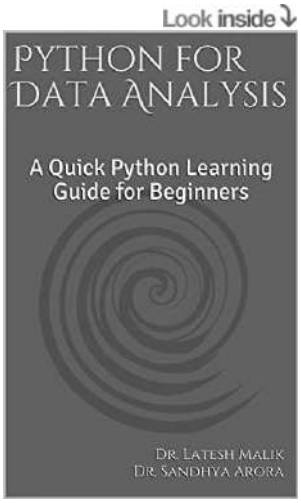
Guide for Beginners
DR. LATESH MALIK
DR. SANDHYA ARORA

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by Dr. Latesh Malik (Author), Dr. Sandhya Arora (Author) Format: Kindle Edition

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# Leader based adaptive fault diagnosis algorithm for distributed systems

Publisher: IEEE

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Juhi Manghwani ; Rutuja Taware ; Supriya Kelkar ; Priyanka Chinde ; Saloni Alwani All Authors



Abstract

Document Sections

I. Introduction

II. Related Work

III. Proposed Leader Based Adaptive Fault Diagnosis (L-AFD) Algorithm

IV. Conclusion

Authors

Figures

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Keywords

**Abstract:**

This paper proposes a new algorithm named Leader Based Adaptive Fault Diagnosis (L-AFD) algorithm for distributed systems. This algorithm detects all faulty nodes in the network where, the network is not fully connected. This algorithm works for the arbitrary network. The t-diagnosibility of a system under consideration is (n-1) where n is total number of nodes or computer systems in the network. This algorithm supports new node entry in the network. It allows re-entry of the repaired faulty nodes during the next diagnostic cycle. This algorithm can also work with more than one leader. This algorithm executes periodically on each node.

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I. Introduction

# Coordinator-based adaptive fault diagnosis algorithm for distributed computing systems

Publisher: IEEE

Cite This PDF

Supriya Kelkar ; Deepali G. Yeole ; Mayuri B. Sinkar ; Priyanka B. Jagtap ; Damini S. Zagade All Authors



Abstract

Document Sections

I. Introduction

II. Related Work

III. Fault Model for C-AFD Algorithm

IV. Proposed C-AFD Algorithm

V. System Model and Analysis

Show Full Outline

Authors

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References

Keywords

Metrics

**Abstract:**

Distributed computing system consists of number of independent computers located at different locations. These computers may become faulty or unresponsive at any point of time. Such failures will affect the overall performance of the distributed system. Thus, it becomes necessary to detect such faulty computers or nodes. This paper proposes a new adaptive fault diagnosis algorithm namely, Coordinator-based Adaptive Fault Diagnosis algorithm for distributed systems. It uses an innovative technique where a coordinator pair supervises and detects the faulty nodes in the system. This is an adaptive fault diagnosis algorithm for t-diagnosable system, where `t' is the upper bound for the number of detectable faulty nodes in the system. This algorithm also allows re-entry of repaired faulty nodes in the next diagnostic cycle. This algorithm is periodically executed at every node to detect the faulty nodes in the distributed computer network. The implementation of the proposed algorithm on a small laboratory setup is presented in this paper along with the results.

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**INSPEC Accession Number:** 17414675

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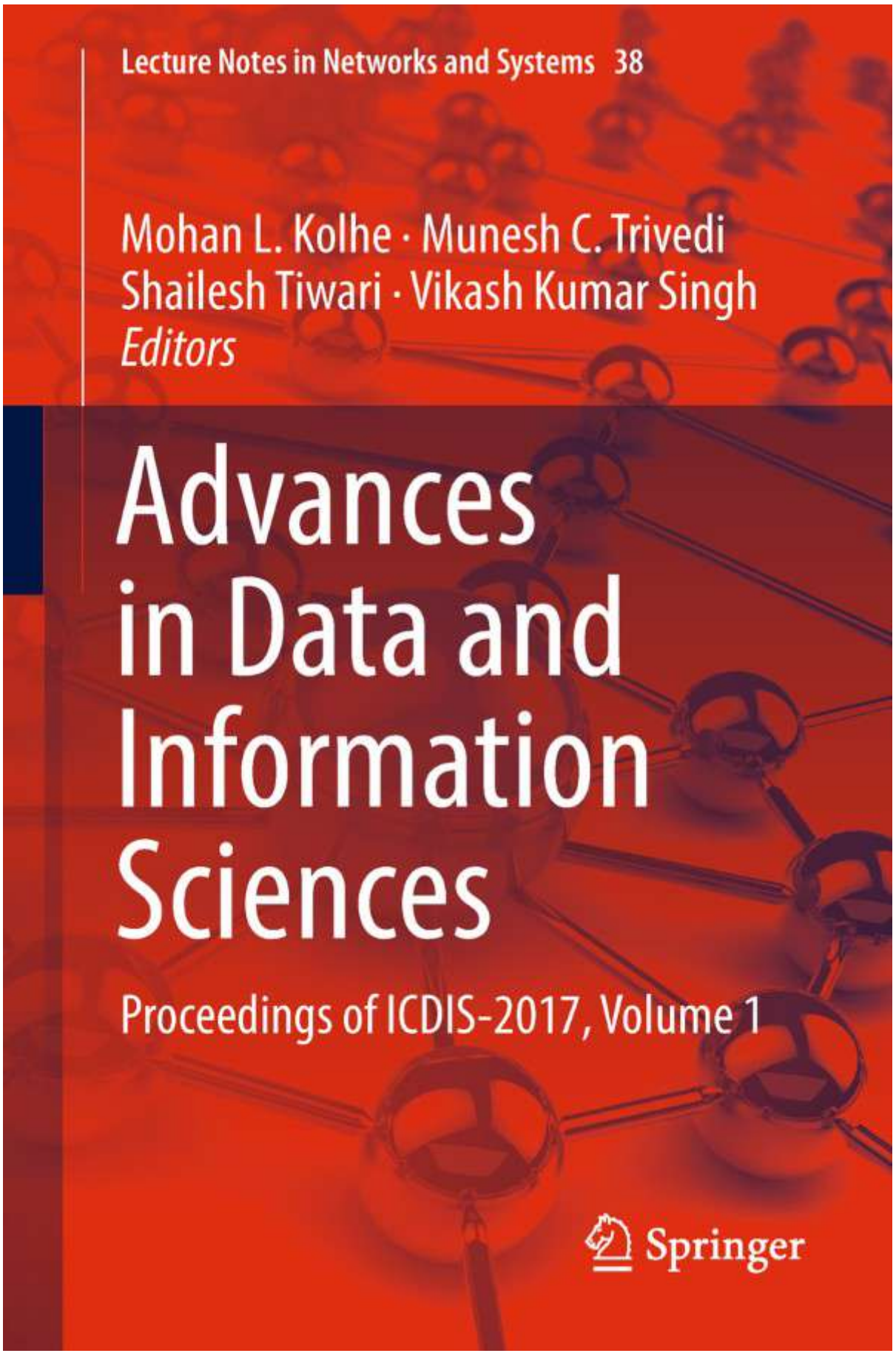
**Publisher:** IEEE

**Conference Location:** Udupi, India

# An Insight into Theory-Guided Climate Data Science—A Literature Review




**Advances in Data and Information Sciences** pp 115–125

# An Insight into Theory-Guided Climate Data Science—A Literature Review

Rafiya Sheikh ✉ & Sunita Jahirabadkar

Conference paper | First Online: 08 April 2018



Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 38)

## Abstract

Data science models, though successful in a large number of commercial domains, have found limited applications in scientific problems that involve complex physical phenomena. Most of these problems comprise of multi-spectral data composites. Climate science and hydrology is one such scientific domain that faces several big data challenges. Climate data poses many challenges in research because of its spatiotemporal characteristics, high degree of variance, and predominantly its physical nature. One such challenging data in climate science and hydrology is precipitation data. Precipitation data is vast, and generated at a fast pace from several sources, but due to the lack of underlying principles, the models in data science to address climatic issues such as precipitation are dysfunctional. These challenges call for a novel approach that integrates domain knowledge and data science models. To do so, the paper surveys an evolving paradigm of theory-guided data science (TGDS). It is a new paradigm in data science and analytics that aims to improve the generalization of data science models and improve their effectiveness in scientific discovery. The authors, through the survey, present the challenges imposed by climate data, which is representative of the precipitation data, and limitations of traditional data science methods. The paper suggests a shift in data science practices to adapt theory-guided data science for climate and hydrology domain of precipitation data, by providing insights on TGDS, its models and approaches.

Keywords

**Data science** **Theory-guided** **Knowledge discovery**

**Climate change** **Climate science** **Precipitation**

## References

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“ Analysis of Blind Image Watermarking Algorithms”

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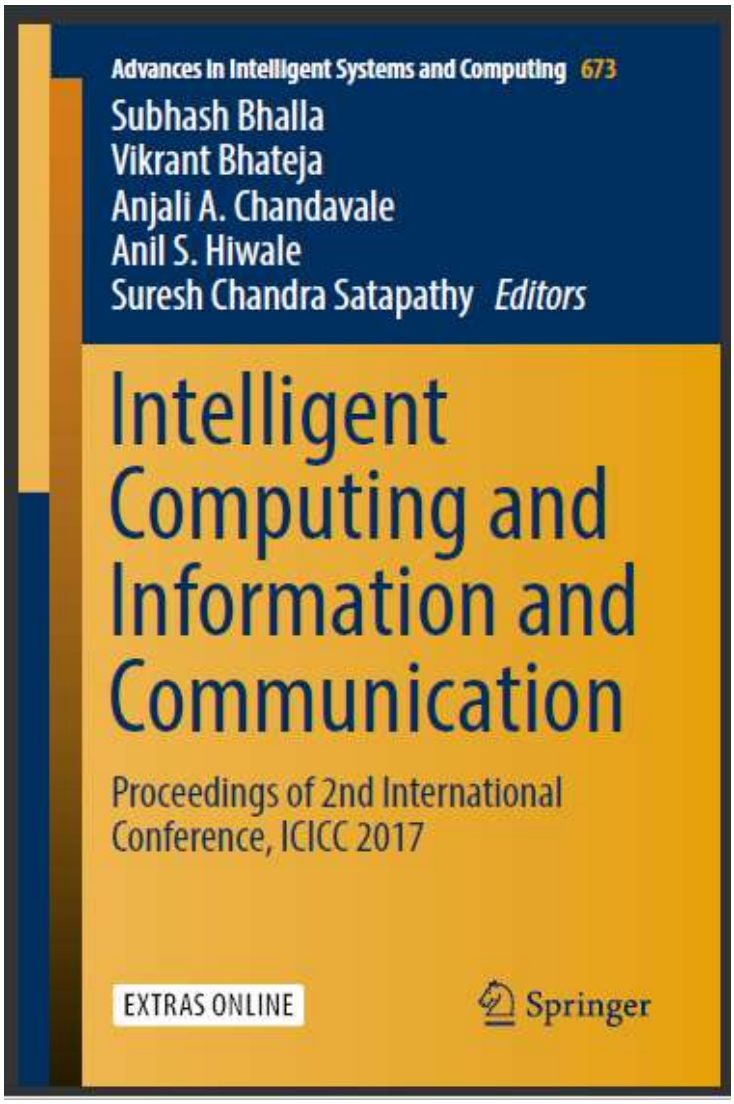

**First Page:**

# Analysis of Blind Image Watermarking Algorithms

**Chhaya S. Gosavi and Suresh N. Mali**

**Abstract** This paper presents an overview of blind image watermarking algorithms. In this paper, we analyzed these algorithms for different criteria like robustness, security, and imperceptibility. We also compared pros and cons of using blind method for embedding and extraction of watermark. Most of these algorithms are implemented using MATLAB 2011 and tested on the standard image dataset. We used true color images of size $256 \times 256$ and binary watermarks of size $32 \times 32$ for testing. This paper will help watermarking researcher to choose the particular algorithms depending on their need for the application they are working on.

**Keywords** Blind · Watermark · DCT · DWT · SVD

## 1 Introduction

A watermark is irremovable, imperceptibility, and robustly embedded in the multimedia data. The process of embedding watermark is called watermarking. A watermark is embedded for protection of digital data from illegally used. The main applications of watermarking are copyright protected, authentication, piracy detection, etc. Many researchers have been working in this area since two decades. Image watermarking is explored by many researchers as it is easy compared with audio and video data and also having a lot of redundant information which can be used for embedding.

Watermarking process is mainly divided into three parts. First, watermark is added into an image. In the next part, it is extracted from the watermarked image and lastly authentication is done by comparing original and extracted watermarks. Watermark insertion can be done in two ways, first is spatial domain and the second

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# Techno-Societal 2018

Proceedings of the 2nd International Conference on Advanced Technologies for Societal Applications - Volume 1

**Editors:** Prashant M. Pawar, Babruvahan P. Ronge, R. Balasubramaniam, Anup S. Vibhute, Sulabha S. Apte



## Sections

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About this book



**Techno-Societal 2018** pp 43–53 | Cite as

# A Framework for Identification of Soybean Leaf Diseases

Radhika Bhagwat, Radha Kokare & Yogesh Dandawate

Conference paper | First Online: 07 November 2019



## Abstract

Agriculture being one of the main occupations in India, its contribution to the Indian economy is expected to be significant. However, statistics show that the contribution made by the agricultural sector to Gross Domestic Product (GDP) is comparatively less. Few main reasons for the decrease in agricultural productivity are adverse climatic conditions and attack due to

## About this paper


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Bhagwat, R., Kokare, R., Dandawate, Y. (2020). A Framework for Identification of Soybean Leaf Diseases. In: Pawar, P., Ronge, B., Balasubramaniam, R., Vibhute, A., Apte, S. (eds) Techno-Societal 2018 . Springer, Cham. https://doi.org/10.1007/978-3-030-16848-3_5

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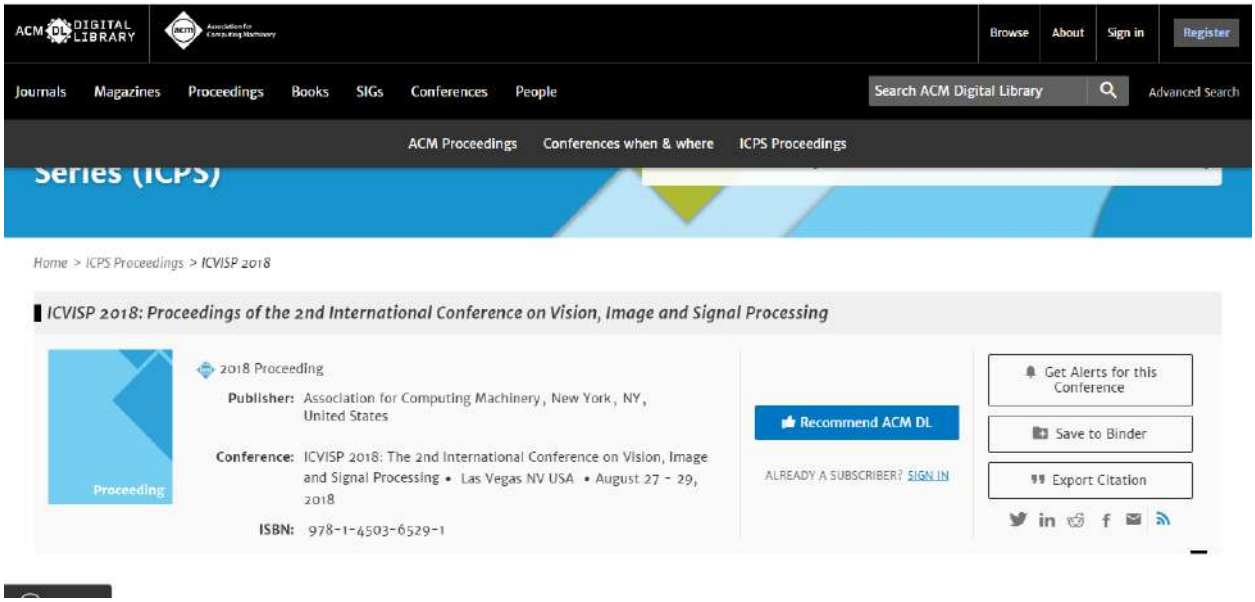
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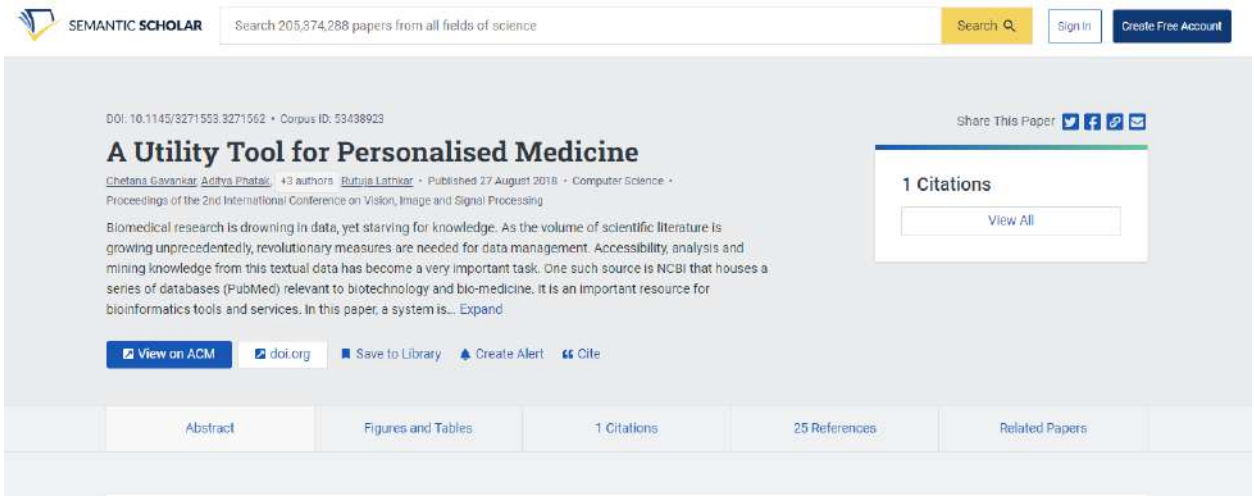
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A Utility Tool for Personalised Medicine
Chetana Gavankar, Aditya Phatak, +3 authors, Rutuja Lathkar • Published 27 August 2018 • Computer Science • Proceedings of the 2nd International Conference on Vision, Image and Signal Processing
Biomedical research is drowning in data, yet starving for knowledge. As the volume of scientific literature is growing unprecedentedly, revolutionary measures are needed for data management. Accessibility, analysis and mining knowledge from this textual data has become a very important task. One such source is NCBI that houses a series of databases (PubMed) relevant to biotechnology and bio-medicine. It is an important resource for bioinformatics tools and services. In this paper, a system is... Expand
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# A Utility Tool for Personalised Medicine

**Authors:** Chetana Gavankar, Aditya Phatak, Nikita Thakkar, Vaidehi Patel, Bhoomi Pragda, Rutuja Lathkar Authors Info & Claims

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## ABSTRACT

Biomedical research is drowning in data, yet starving for knowledge. As the volume of scientific literature is growing unprecedentedly, revolutionary measures are needed for data management. Accessibility, analysis and mining knowledge from this textual data has become a very important task. One such source is NCBI that houses a series of databases (PubMed) relevant to biotechnology and bio-medicine. It is an important resource for bioinformatics tools and services. In this paper, a system is proposed that encases all the biomedical articles of PubMed as needed by bioinformaticians. Using machine learning and natural language processing, the tool aims at assisting clinicians and biomedical researchers to understand and graphically represent the relevance of gene in a given disease context. It will also support entity-specific bio-curation searches to get a list of most effective drugs for a particular disease. The system is evaluated by using standard information retrieval measures namely, Precision, Recall and F-score to measure the relevance of search results.

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# Interface Implementation for Quantifying Information Spread on Social Networks

Publisher: IEEE Cite This PDF

Prajakta Kumbhojkar ; Masumi Jain ; E. Rajalakshmi ; Shyamsalonee Rawal ; Sneha Thombre All Authors



Abstract
Document Sections
I. Introduction
II. Related Work
III. Proposed System
IV. Methodology
V. Results and Observation
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**Abstract:**
Social media today, has grown into a vital facet of modern human existence. A remarkable amount of the information reaching us comes in the form of posts and messages on social media. As a result of the ever-growing social media, it has turned into an essential scheme for viral marketing and influencing the masses. Hence, it becomes imperative to discern how information spreads on such networks and how much. The methodology suggested in the Restrained-Susceptible-Infected-Recovered (RnSIR) Model enables us to calibrate the spread of knowledge and material on networks. This paper proposes an interface which uses the calculations given by the RnSIR model. Essentially, this interface prompts users to give a network interaction data set as the input and outputs the information dispersion on inputted network. It uses the same algorithms to do this as the RnSIR model.

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# Implementation of the RnSIR Model

Publisher: IEEE Cite This PDF

E. Rajalakshmi ; Prajakta Kumbhojkar ; Shyamsalonee Rawal ; Masumi Jain ; Sneha Thombre All Authors



Abstract

Document Sections

I. Introduction

II. Related Work

III. Proposed system

IV. Methodology

V. Results and Observation

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Keywords

Metrics

**Abstract:**
By etymology, the word viral stems from virus, a term used to describe the spread of effect of infectious symptoms across organisms. On the internet, a piece of content can spread similar to a virus, making people infected as and when they come in contact with it. The infection usually occurs when the user shares it, with its circle of friends and associates on a social network. However, it is possible to predict the reach of information across a number of users in a directed network data set. This is possible through the proposed interface which uses the calculations proposed in the Restrained-Susceptible-Infected-Recovered (RnSIR) model. The interface accepts a data set as an input from the users whilst giving the percentage of information spread in that network as the output. The calculations at the interface back-end are done by using the same algorithms as used by the RnSIR model, to select influential nodes and then calculate the said percentage using them with the help of an algorithm. The interface poses to be useful for tracking the spread of information in a directed network for social media marketing and peripheral tactics.

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Applications to Electrical, Electronics and Computer Science and Engineering

**Editors:** Vinit Kumar Gunjan, Vicente Garcia Diaz, Manuel Cardona, Vijender Kumar Solanki, K. V. N. Sunitha



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# A Study of Vehicular Parking Systems

Srishti Nene, Shivani Mundle, Sakshi Mahajan, Samrudhi Yeginwar & Leena Panchal

Conference paper | First Online: 28 June 2019



## Abstract

In today's world, to find a parking space for a vehicle is troublesome and tiring. Various methods can be opted to find an optimal solution for the parking problem. These methods incorporate the use of various types of sensors such as Radio Frequency Identification (RFID), image sensors, Infrared sensors (IR), ultrasonic sensors etc. A few of these systems also fuse the concept of Internet Of Things (IoT) and cloud database and collaborate with hardware to provide a better interface to the user. They also try to make their applications more user friendly by merging them with visual and vocal instructions and fusing them with an Android-

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## About this paper

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Advances in Intelligent Systems and Computing 563

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# Progress in Advanced Computing and Intelligent Engineering

## Proceedings of ICACIE 2016, Volume 1

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# Parameter-Controlled Gas Sensor System for Sensor Modeling

**Dipali Ramdasi and Rohini Mudhalwadkar**

**Abstract** When a gas is passed over a chemically sensitive layer, its electrical properties change due to adsorption of gas molecules. This phenomenon is implied in thin film sensors. To improve the sensitivity and selectivity of sensors, a parametric modeling approach is preferred. In this, the parameters affecting sensor response are varied, and the sensor response is acquired for developing a model based on variation of parameters. The developed model suggests changes in sensor design and operating parameters, enhancing sensor performance for detecting explosives. A system in which the parameters of temperature, cycle time, and gas concentration can be varied is implemented using an embedded system approach. To facilitate the development of model, the sensor response is made available in comma-separated values. Also, a real-time plot of the sensor response is made available for identification of presence of a nitroaromatic explosive.

**Keywords** Nitroaromatic explosive · Parametric model · Real-time plot

## 1 Introduction

The use of various types of explosives by terrorists to spread violence and unrest among common people has motivated researchers to work on urgent and immediate detection of explosives. When explosives are packed in metal containers, they can be detected by metal detectors. Though this method is successful in case of landmine and weapon detection, [1, 2] this has a limited scope in explosives packaged intelligently. The timely detection of explosives and making them inactive is a challenging task. Sniffer dogs are considered as one of the most reliable tools for the detection of explosive vapors and compelled researchers to contribute in the area of electronic

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# Performance Parameter Based Comparison of Various Transforms

Publisher: IEEE





Apurwa Sanjay Jagtap ; Revati Shriram All Authors



Abstract

Document Sections

I. Introduction

II. Signal Transforms

III. Proposed System

IV. Result and Discussions

V. Conclusion

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**Abstract:**In this paper we present analysis and implementation of Discrete Cosine Transform (DCT), Discrete Wavelet Transform (DWT) with “Symlet 4 (Sym 4)” and “Biorthogonal 3.5 (B... **View more**

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**Abstract:**
In this paper we present analysis and implementation of Discrete Cosine Transform (DCT), Discrete Wavelet Transform (DWT) with “Symlet 4 (Sym 4)” and “Biorthogonal 3.5 (Bior 3.5)” and Slantlet Transform. The DCT transforms signal and images from spatial domain to frequency domain. The DWT separates 1-D signal into approximate and detail information and 2-D signal into four sub-bands LL, LH, HL, and HH. The Slantlet Transform is known as orthogonal discrete wavelet transform. It separates 1-D signal into two sub-bands approximate and detail information and 2-D signal into four sub-bands LL, LH, HL, and HH respectively. In this paper we present decomposition and reconstruction of 1-D signal (ECG) and 2-D signal(image) by using DCT, DWT with “sym 4” and “Bior 3.5” and Slantlet Transform. Signal decomposition and reconstruction is important tool for compression, watermarking and steganography applications. The amount of distortion between input signal and reconstructed signal and the quality of reconstructed signal is evaluated by calculating statistical parameters. The quality of reconstructed signal by using DCT, DWT and Slantlet Transform is measured by calculating statistical parameters such as Mean Squared Error (MSE), Peak Signal to Noise Ratio (PSNR) and Normalised Root Mean Squared Error (NRMSE) to analyse

performance of all these transforms respectively. Our experimental results have shown that MSE using DCT and Bior 3.5 is less than MSE using Slantlet transform and Sym 4 respectively. Hence DCT and DWT with Bior 3.5 proves better for signal decomposition and reconstruction than DWT with Sym 4 and Slantlet Transform.

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## Contents

**I. Introduction**
Transform is a mathematical operation that takes function or sequence and maps it into another one. The transform of the function may give additional or hidden information about original signal, which may not be available obvious otherwise. The mathematical transformations is the effective tool for solving problems in many fields of science, engineering area, and image processing. Transformation plays important role in signal processing and image processing in variety of applications such as compression, security, and analysis of different signals and images. For this purpose variety of transformations are introduced such as Fourier Transform(FT), Discrete Cosine Transform(DCT), Discrete Wavelet Transform(DWT), Slanlet Transform.



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# Clothing Pattern Recognition Using Features Extraction of Wavelet Coefficient for Visually Impaired People

Publisher: IEEE 

Tejashri M. Sonawane ; H. T. Patil All Authors



Abstract

Document Sections

I. Introduction

II. Related Work

III. Proposed System

IV. Svm Classifier

V. Experiments and Discussions on Clothing Pattern Recognition

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**Abstract:**
Picking garments with confused examples and hues is a testing assignment for outwardly disabled individuals. Programmed apparel design acknowledgment is additionally a yearning research issue because of pivot, scaling, enlightenment, and particularly extensive intraclass design varieties. This approach is to plan a model that will create an ongoing item advancement for outwardly disabled individuals. Such a system of recognizing clothing patterns automatically having different colors makes their life better and improve their life quality. The designed prototype will cover most of the clothing pattern such as plaid, striped, pattern-less, irregular and also recognize 8 type of colors. The system includes a speaker, a computer, MATLAB tool installed on computer. The output of this system is given by audio signal. The yield of this framework is given by sound flag. The attire designs are perceived to daze clients verbally. Such a framework would support to outwardly hindered individuals and more freedom in their day by day life.

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**Publisher:** IEEE

**Conference Location:** Tirunelveli, India

## I. Introduction

# Exhaled Breath Analysis for Renal Diseases Using Artificial Neural Network Classifier

**Publisher: IEEE**



Rasika Shirode ; Dipali Ramdasi **All Authors**



Abstract

Document Sections

I. Introduction

II. System Block Diagram

III. Features Calculation

IV. Data Classification

V. Results

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**Abstract:**Human body includes unstable natural mixes (VOCs-volatile organic compounds) which can be biomarkers of different diseases. It is circuitous, modest, quantitative and pre... **View more**

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**Abstract:**

Human body includes unstable natural mixes (VOCs-volatile organic compounds) which can be biomarkers of different diseases. It is circuitous, modest, quantitative and prescreening method utilized for detection of dangerous gases in breathed out breath. In this way, it can be generally utilized in rural zones. Concentration of ammonia gas exhibit in breathed out breath is an early recognition of renal disappointment. Early discovery is required for lessening death rate related with it. For precise diagnosis, two sensors are utilized for measuring of ammonia gas in breathed out breath. Abnormality detection in individuals will be done by classifying breath samples using different artificial alternatives. Features are extracted from each sensor response of samples. Artificial Neural Network (ANN) with different training functions is applied to extracted features for classification. Final analysis is

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done by comparing ANN output of both sensors. It will be useful to decide whether person requires prescreening by other pathological techniques or not. System classification's accuracy using pattern recognition neural network and Elman neural network is maximum with the value of 88%.

**Published in:** 2018 International Conference on Communication and Signal Processing (ICCSP)

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**Conference Location:** Chennai, India

## Contents

**I. Introduction**

Breath investigation have been utilized as a part of clinical diagnostics, human breathed out breath contains different natural and inorganic mixes like ammonia gas, carbon monoxide, hydrogen sulfide, ethane, pentane, isoprene and so forth. These mixes are biomarker of different perilous diseases like renal disappointment, lungs illness, oxidation push, gastrointestinal infection, metabolic scatters, diabetes and so forth. It is preparatory analyze method and non-obtrusive, nondestructive, minimal effort technique for location of those perilous infections. The fundamental favorable position of breath examination is that it can apply all age individuals with no hazard. Concentration of these gases is estimated using distinctive strategies. Analysis of individual relies upon quantitative estimation of gas. There are sure disease location techniques right now accessible in restorative diagnostics like Computer Tomography (CT), Magnetic resonance imaging (MRI), mammography, ultrasonography, X-beam for malignancy recognition. These techniques are extremely costly and not effectively accessible to individual who lives in village or country territory. Breathed out breath analysis utilizing MOS sensors (electronic nose) utilizes diverse gas sensors for estimating concentration of VOCs in breath. Utilization of two gas sensor forestalls inaccurate analysis of individual, if any of sensors gets broken or demonstrates wrong readings. It is modest and simple strategy so moderate and effortlessly accessible to economically backward individuals. This technique isn't required all around prepared staff. When equipment framework sets; diagnosis is done naturally after breathed out breath of individual.



Authors
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# Effect of Temperature and Pressure on the Thickness Mode Resonant Spectra of Piezoelectric Ceramic

To cite this article: Vaishali M. Upadhye and Sudhir D. Agashe 2017 *IOP Conf. Ser.: Mater. Sci. Eng.* **225** 012125

IOP Conf. Series: Materials Science and Engineering **225** (2017) 012125 doi:10.1088/1757-899X/225/1/012125

# Effect of Temperature and Pressure on the Thickness Mode Resonant Spectra of Piezoelectric Ceramic

**Vaishali M.Upadhye[1], SudhirD.Agashe[2]**
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**Abstract:**Piezoelectric Lead ZirconateTitanate (PZT) ceramics based acoustic transducers are widely used in a multitude of applications as sensors and actuators. Different modeling techniques are used by transducer designers to test the original designs without building costly prototypes. The equivalent circuit of piezoelectric vibrator represented by Van Dykemodel is used to plot the resonant curve. Based on the application, piezoelectric materials in the acoustic transducers are subjected to a variety of environmental conditions. This results in the shift in the resonant frequency. This paper reports the effect of change in temperature and pressure on the thickness mode response of equivalent circuit of piezoelectric Lead ZirconateTitanate (PZT) ceramic. The ranges considered are suitable for under water applications. With varying conditions of temperature and pressure, the changes in resonant and anti-resonant frequencies of the piezoelectric material are noted. Using these practically obtained values, parameters of the model are computed and the shift in the resonance curve is observed for the conditions considered. The values of resonant and anti-resonant frequencies obtained from the model response match with those obtained experimentally for the given conditions. Other material constants required for building realistic Finite Element Analysis models can be computed using these practically obtained values of resonant and anti-resonant frequencies.

**Keywords:**Piezoelectric ceramic, Process parameter modeling,resonant spectra, thickness mode vibration.

## 1. INTRODUCTION

Acoustic transducers which use Lead ZirconateTitanate (PZT) ceramic as the piezoelectric material are widely used in various applications.Mathematical modelling plays an important role in designing these transducers. It helps to meet the specifications in a shorter time [1]. The Van Dykemodelwhich represents the equivalent circuit of piezoelectric vibratoris used to plot the resonant curve [2-4]. Accuracy of the model depends on the accuracy of the material properties. These properties depend on process conditions prevailing in the given application. Therefore the useful approach would be to characterize the materials under the exact conditions of their use. The results thus obtained can be used in designing the transducers [5]. Acoustic transducer used for underwater applications is subjected to considerable temperature and pressure variations below the surface of water [6-9]. PZT is the most commonly used piezoelectric material. This material has been a subject of intensive investigation and study of change in its material constants with temperature and pressure is widespread [10-13]. In most of

# Thin film sensor materials for detection of Nitro-Aromatic explosives

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# Thin film sensor materials for detection of Nitro-Aromatic explosives

**Dipali Ramdasi[1] and Rohini Mudhalwadkar[2]**

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**Abstract**. Many countries have experienced terrorist activities and innocent people have suffered. Timely detection of explosives can avoid this situation. This paper targets the detection of Nitrobenzene and Nitrotoluene, which are nitroaromatic compounds possessing explosive properties. As direct sensors for detecting these compounds are not available, Polyaniline based thin film sensors doped with palladium are developed using the spin coating technique. The response of the developed sensors is observed for varying concentrations of explosives. It is observed that zinc oxide based sensor is more sensitive to Nitrotoluene exhibiting a relative change in resistance of 0.78. The tungsten oxide sensor is more sensitive to Nitrobenzene with a relative change in resistance of 0.48. The sensor performance is assessed by measuring the response and recovery time. The cross sensitivity of the sensors is evaluated for ethanol, acetone and methanol which was observed as very low.

## 1. Introduction

Every country is experiencing terrorist activities and the destruction caused by explosives is well known to all of us. Among hundreds of types of explosives, the use of nitroaromatic explosives is very common. Mixtures with Nitrobenzene (PubChem CID 7416), 4 Nitrotoluene (PubChem CID 7473), are found to be highly explosive of high sensitivity and detonation velocity. Also, mixtures with Nitrobenzene are spark detonable and pose a severe hazard to mankind. [1] The Ion Mobility Spectroscopy, Mass Spectrometry, Infrared Spectroscopy and Raman Spectroscopy are some of the common spectroscopic methods used for explosive detection in-house as described by several researchers [2, 3, 4, 5]. Though these methods are accurate, their use is confined to laboratories. These methods are time consuming and skilled personnel are required to handle these equipment. Though commercially available sensors exhibit a good sensitivity and selectivity, sensors for detecting Nitrobenzene (NB) and Nitrotoluene (NT) are not available. Considering the explosive properties of these compounds, this work aims at developing low cost laboratory developed sensors for detection of Nitrobenzene and Nitrotoluene.

For detection on the field, research on various sensors is being carried out. One of the popular sensors is the metal oxide sensors as suggested by Gardener [6]. Many scientists and engineers have studied metal oxide thin films as electronic materials due to their semiconducting behavior, structural simplicity and low cost [7, 8, 9]. These sensors exhibit change in its electrical properties (typically


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# Experimental and Numerical analysis of Metallic Bellow for Acoustic Performance

Amit A Panchwadkar[1], Pradeep J Awasare Dr.[2] and Ravidra B Ingle Dr.[3]



IOP Conference Series: Materials Science and Engineering, Volume 225, International Conference on Materials, Alloys and Experimental Mechanics (ICMAEM-2017) 3–4 July 2017, Narsimha Reddy Engineering College, India

**Citation** Amit A Panchwadkar *et al* 2017 *IOP Conf. Ser.: Mater. Sci. Eng.* **225** 012216

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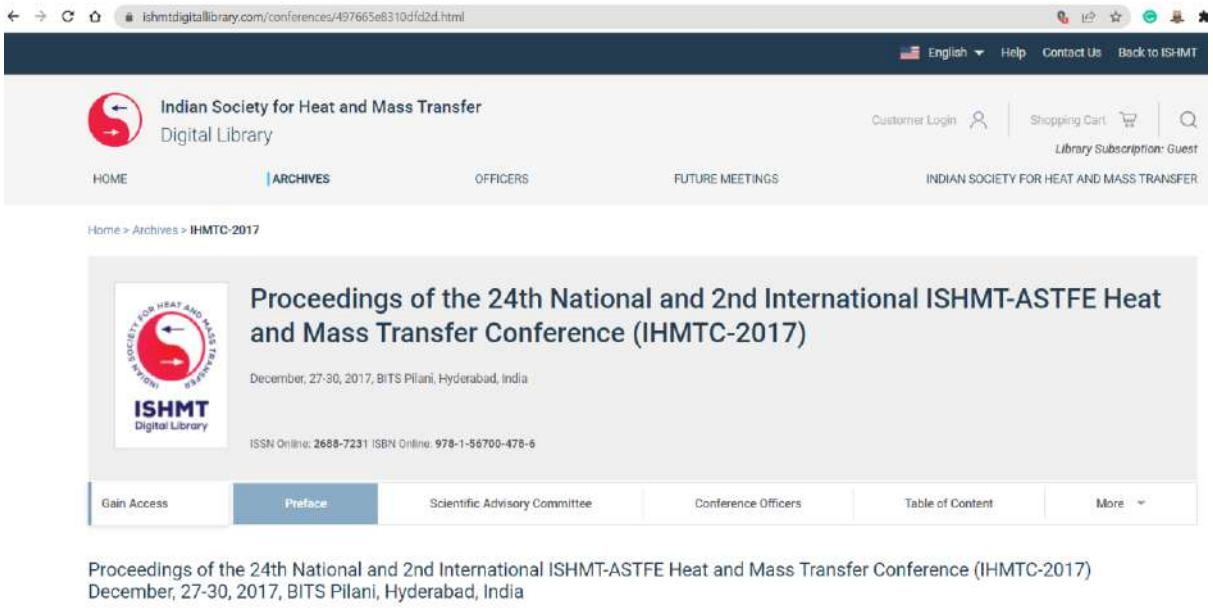


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IHMTC2017-09-0059

# NUMERICAL ANALYSIS OF FLOW THROUGH PIPE WITH TWISTED TAPE INSERT

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## ABSTRACT

*The present study reports the numerical analysis of flow and heat transfer in a pipe with full length twisted tape insert. The investigation is carried out for five different twist ratio of 4, 5, 6, 8 and 10 at $100 \leq Re \leq 1000$. The variation of tangential and radial velocity, of fluid with twist ratio and Reynolds number is studied. The variation of friction factor and Nusselt number with Reynolds number for different twist ratios is also presented. The heat transfer enhancement due to insertion of twisted tape mainly comes from the secondary flow. The tangential and radial component of the velocity in flow can be regarded as secondary fluid motion. The secondary flow affects the thermal boundary layer inside the tube which increases the heat transfer. The correlations for prediction of friction factor and Nusselt number based on the numerical data are proposed.*

## NOMENCLATURE

A Area of Cross Section
$\alpha$ Void Fraction
D Diameter of the tube (m)
f Friction Factor
H Twist pitch length (m)
h Convective heat transfer coefficient (W/(m$^2$ K))
k Thermal conductivity of the material in (W/(m K))
L Tube axial length (m)
Nu Nusselt Number
p Static Pressure (N/m$^2$)
Pr Prandtl Number
q Heat Flux (W/m$^2$)
Re Reynolds Number
T Temperature (K)
$u, v, w$ Components of velocity vector (m/s)
V Velocity (m/s)
$V_r, V_\theta, V_z$ Components of velocity vector (m/s)
$x, y, z$ Components of Cartesian coordinates (m)
$\delta$ Thickness of the tape (m)
$\mu$ Dynamic Viscosity (N s/m$^2$)
$\rho$ Density (kg/m$^3$)
$\theta$ Temperature Difference $(T - T_b)$ (K)
$\theta_0$ Temperature Difference $(T_w - T_b)$(K)
w Wall Side
b Bulk Fluid Value

*Corresponding Author

## 1 INTRODUCTION

High cost and scarcity of energy have resulted in an increased efforts aimed at producing more efficient heat exchangers. Efficiency of heat exchangers can be increased using heat transfer augmentation techniques. One of the most favorable heat transfer augmentation technique is generating swirl flow by insertion of a twisted tape because the tape is inexpensive and can be easily employed to the existing system. The presence of twisted tape directs towards mixing of the flow streams, leading to greater convective heat transfer.

Twisted tapes are metallic strips twisted along their longitudinal axis at desired dimensions. Insertion of these steps, provides simple passive heat transfer augmentation by introducing the swirl to the flow and decreasing the thickness of the boundary layer. Twisted tape inserts force the fluid to follow a helical path rather than a straight. This results in increased convective heat transfer coefficient between the tube and the fluid. The other reason for this increased heat transfer are the higher velocity in the case of helical flow than in the case of straight flow. Moreover, the helical path induces a secondary flow causing greater mixing. The centrifugal force field due to the helical flow increases the heat transfer rate when the heat is transferred from the tube surface to the fluid. This is due to the greater mixing resulting from the displacement of the lighter and hotter fluid from the tube wall by the denser and colder fluid from the core splashed to the tube wall. The twisted tape itself provides an additional heat transfer surface by acting as a fin. Twisted tapes are widely investigated by many researchers since twentieth century. Smithberg and Landis [1] in their experimental study revealed that the twisted tape converts straight flow passage into two semicircular helical passages. The swirls produced by the flow alters the near wall velocity and temperature profiles. These effects are predominantly responsible for heat transfer enhancement. The perfor-

# Behavior of single lap composite bolted joint under traction loading: Experimental investigation

AIP Conference Proceedings 1943, 020124 (2018); https://doi.org/10.1063/1.5029700

L. V. Awadhani[1,a] and Anand Bewoor[2,b]

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## ABSTRACT

Composite bolted joints are preferred connection in the composite structures to facilitate the dismantling for the replacements/ maintenance work. The joint behavior under tractive forces has been studied in order to understand the safety of the structure designed. The main objective of this paper is to investigate the behavior of single-lap joints in carbon fiber reinforced epoxy composites under traction loading conditions. The experiments were designed to identify the effect of bolt diameter, stacking sequence and loading rate on the properties of the joint. The experimental results show that the parameters influence the joint performance significantly.



# Capacitive sensor for engine oil deterioration measurement

AIP Conference Proceedings **1943**, 020099 (2018); https://doi.org/10.1063/1.5029675

Harish Shinde[1,a] *and* Anand Bewoor[1]

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## ABSTRACT

A simple system or mechanism for engine Oil (lubricating oil) deterioration monitoring is a need. As engine oil is an important element in I C engines and it is exposed to various strains depending on the operating conditions. If it becomes contaminated with dirt and metal particles, it can become too thick or thin and loses its protective properties, leads to unwanted friction. In turn, to avoid an engine failure, the oil must be changed before it loses its protective properties, which may be harmful to engine which deteriorates vehicle performance. At the same time, changing the lubricant too early, cause inefficient use of already depleting resources, also unwanted impact on the environment and economic reasons. Hence, it will be always helpful to know the quality of the oil under use. With this

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# Thermal analysis of solar desalination system using evacuated tube collector

AIP Conference Proceedings **2039**, 020061 (2018); https://doi.org/10.1063/1.5079020

S. A. Kedar[1,a], K. Arul Raj[2], and A. K. Bewoor[3]

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## ABSTRACT

In the developed and developing countries availability of drinking water is the main priority of human being. Fresh water found in rivers, lakes, and ground water constitutes just 3% of water on earth and remaining as hard water. Soft water which is useful for drinking is in shortfall. This research is an attempt to haunt solar energy to desalinate hard water into portable water to add advantage of renewability. A solar thermal desalination system has been proposed whereby heat from solar energy is utilized for heating hard (salt) water which is passed through evacuated tube collector. The steam thus formed is passed through a condenser where it condenses to get soft water. It will be considerably higher amount of

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# Supervised classification of type of crowd motion in video surveillance system

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Gauri Deshmukh ; Manasi Pathade ; Madhuri Khambete All Authors

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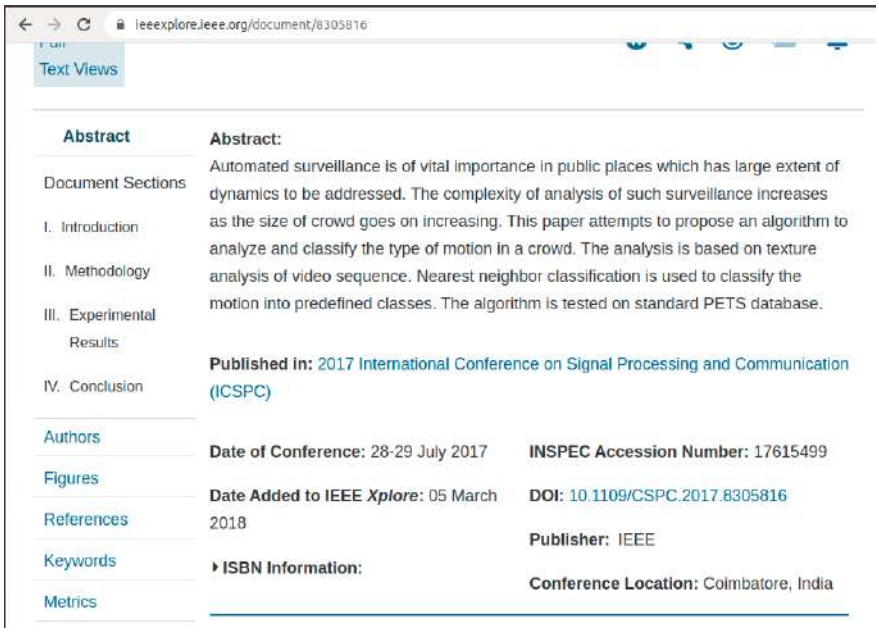
**Abstract:**
Automated surveillance is of vital importance in public places which has large extent of dynamics to be addressed. The complexity of analysis of such surveillance increases as the size of crowd goes on increasing. This paper attempts to propose an algorithm to analyze and classify the type of motion in a crowd. The analysis is based on texture analysis of video sequence. Nearest neighbor classification is used to classify the motion into predefined classes. The algorithm is tested on standard PETS database.

**Published in:** 2017 International Conference on Signal Processing and Communication



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Automated surveillance is of vital importance in public places which has large extent of dynamics to be addressed. The complexity of analysis of such surveillance increases as the size of crowd goes on increasing. This paper attempts to propose an algorithm to analyze and classify the type of motion in a crowd. The analysis is based on texture analysis of video sequence. Nearest neighbor classification is used to classify the motion into predefined classes. The algorithm is tested on standard PETS database.

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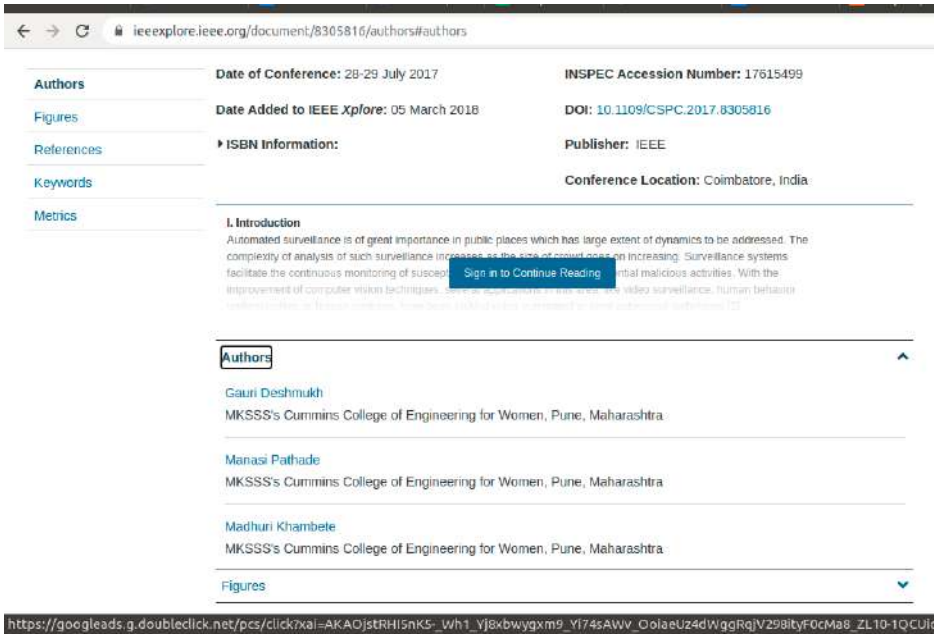
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I. Introduction
Automated surveillance is of great importance in public places which has large extent of dynamics to be addressed. The
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G. Deshmukh, M. Pathade and M. Khambete, "Supervised classification of type of crowd motion in video surveillance system," 2017 International Conference on Signal Processing and Communication (ICSPC), 2017, pp. 99-101, doi: 10.1109/CSPC.2017.8305816.

# Image Quality Assessment Database for Demosaicing Artifacts

Publisher: IEEE

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Metrics

**Abstract:**
Demosaicing is an essential process in digital color cameras for full-color image reproduction. Incorrect demosaicing process produces visible artifacts like blur, zipper artifact, moire effect, and false color. The later three artifacts are perceived as color halos. So, color halos and blur are the primary visible artifacts in the demosaiced image. In this paper, we conducted a psycho-visual experiment for assessing color halos in the demosaiced image. We decided to assess only color halos because no image quality assessment (IQA) database is available for visible color halos. Twelve undergraduate students participated in the experiment. The proposed IQA database includes 124 demosaiced images (31 reference images and 4 demosaicing algorithms). Four demosaicing techniques were selected after observing demosaiced images of 8 state-of-the-art demosaicing techniques, for visible color halos. The proposed IQA database will be utilized in developing novel IQA metrics for color halos.

**Published in:** 2018 International Conference on Communication and Signal Processing (ICCSP)

**Date of Conference:** 03-05 April 2018

**INSPEC Accession Number:** 18245435

**Date Added to IEEE Xplore:** 08 November 2018

**DOI:** 10.1109/ICCSP.2018.8524259

**ISBN Information:**

**Publisher:** IEEE

**Conference Location:** Chennai, India

## I. Introduction

Digital color cameras require three sensors to capture three color intensity values at a pixel. Due to cost and size constraints



Authors
Figures
References
Keywords
Metrics

## About this paper

### Cite this paper

Ohatkar, S., Tupe, K. (2018). Applying Bacterial Colony Optimization to Cognitive Cellular Network for Evaluating SINR. In: Perez, G., Tiwari, S., Trivedi, M., Mishra, K. (eds) Ambient Communications and Computer Systems. Advances in Intelligent Systems and Computing, vol 696. Springer, Singapore. https://doi.org/10.1007/978-981-10-7386-1_15

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| 21 March 2018 | Springer, Singapore | 978-981-10-7385-4 |

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| 978-981-10-7386-1 | Engineering<br>Engineering (R0) |




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Ambient Communications and Computer Systems pp 173–181 | Cite as

# Applying Bacterial Colony Optimization to Cognitive Cellular Network for Evaluating SINR

Sharada Ohatkar & Komal Tupe

Conference paper | First Online: 21 March 2018

**1027** Accesses

Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 696)

## Abstract

The cognitive cellular network (CCN) is the key to complete the requirement of the cellular user request along with the improvement in channel allocation. CCN consists of cellular as a primary and cognitive as secondary user in which the cognitive user occupies the cellular band without causing interference. In order to reduce interference between spectrum allocation for

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**Editors:** Gregorio Martínez Perez, Shailesh Tiwari, Munesh C. Trivedi, Krishn K. Mishra

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## About this paper

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### Cite this paper

Ohatkar, S., Tupe, K. (2018). Bacterial Colony Optimization for Data Rate Evaluation in Cognitive Cellular Network. In: , *et al.* Smart Trends in Information Technology and Computer Communications. SmartCom 2017. Communications in Computer and Information Science, vol 876. Springer, Singapore. https://doi.org/10.1007/978-981-13-1423-0_31

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https://doi.org/10.1007/978-981-13-1423-0_31

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| 21 August 2018 | Springer, Singapore | 978-981-13-1422-3 |

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| 978-981-13-1423-0 | Computer Science<br>Computer Science (R0) |







International Conference on Smart Trends for Information Technology and Computer Communications

↳ SmartCom 2017: **Smart Trends in Information Technology and Computer Communications** pp 292–299 | Cite as


# Bacterial Colony Optimization for Data Rate Evaluation in Cognitive Cellular Network


Sharada Ohatkar & Komal Tupe



Conference paper | First Online: 21 August 2018

**373** Accesses

Part of the Communications in Computer and Information Science book series (CCIS,volume 876)



## Abstract

The Cognitive Cellular Network (CCN) is the key to complete the requirement of the cellular user request along with the improvement in channel allocation. CCN consist of cellular user as a primary and cognitive as secondary user in which the cognitive user occupies in the cellular band without causing interference. To check and improvise the network capacity of the cellular

Conference proceedings | © 2018

# Smart Trends in Information Technology and Computer Communications

Second International Conference, SmartCom 2017, Pune, India, August 18-19, 2017, Revised Selected Papers

**Editors:** A.V. Deshpande, Aynur Unal, Kalpdrum Passi, Dharm Singh, Malaya Nayak, Bharat Patel, Shafi Pathan

**Part of the book series:** Communications in Computer and Information Science (CCIS, volume 876)

**Conference series link(s):** SmartCom: International Conference on Smart Trends for Information Technology and Computer Communications



Conference proceedings info: SmartCom 2017.

# International Conference on Computing Communication Control and Automation (ICCUBEA)





**2017 International Conference on Computing, Communication, Control and Automation (ICCUBEA)**
17-18 Aug. 2017

DOI: 10.1109/ICCUBEA41871.2017



**Preface**
Publication Year: 2017 , Page(s): 1 - 40

**An Adaptive Approach for Image Denoising Using Pixel Classification and Gaussian Conditional Random Field Technique**
Bhushan S. Thakare; Hemant R. Deshmukh
Publication Year: 2017 , Page(s): 1 - 8
Cited by: Papers (3)
Abstract HTML

# Classification of Human Emotions Using Multiclass Support Vector Machine



Anita Patil ; Ketaki Behele All Authors



Abstract

Document Sections

I. Introduction

II. Methodology

III. Results

IV. Conclusion

Authors

Figures

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Citations

Keywords

**Abstract:**

Emotion recognition plays a very important role in establishing brain computer interface. Emotion recognition can be done by analyzing speech signal or facial expressions. But these methods cannot be considered as reliable indicators of emotion, because it is possible to generate fake data in these methods. In this paper, Electroencephalography (EEG) is used for detection and classification of different emotions. EEG proves to be more reliable method as it is not possible for the subject to alter the data. The proposed method consists of four steps, viz., data acquisition, pre-processing, feature extraction and classification. Emotions are invoked by using audio visual stimuli. EEG signal is captured for four emotions viz. happy, sad, angry and neutral using power lab instrument by ADInsruments. The recorded EEG signal is then filtered using band pass filter with cutoff frequencies of 3Hz and 30Hz. Discrete Wavelet Transform is applied to the filtered data and then statistical features are extracted. Multiclass Support Vector Machine is incorporated to classify EEG signals into different emotion classes.

**Published in:** 2017 International Conference on Computing, Communication, Control and Automation (ICCUBEA)

**Date of Conference:** 17-18 August 2017

**Date Added to IEEE *Xplore*:** 13 September 2018

**ISBN Information:**

**INSPEC Accession Number:** 18128922

**DOI:** 10.1109/ICCUBEA.2017.8463656

**Publisher:** IEEE

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# Smart Trends in Information Technology and Computer Communications

Second International Conference, SmartCom 2017, Pune, India, August 18-19, 2017, Revised Selected Papers

**Editors:** A.V. Deshpande, Aynur Unal, Kalpdrum Passi, Dharm Singh, Malaya Nayak, Bharat Patel, Shafi Pathan

**Part of the book series:** Communications in Computer and Information Science (CCIS, volume 876)

**Conference series link(s):** SmartCom: International Conference on Smart Trends for Information Technology and Computer Communications



Conference proceedings info: SmartCom 2017.

## Sections

International Conference on Smart Trends for Information Technology and Computer Communications
↳ SmartCom 2017: **Smart Trends in Information Technology and Computer Communications** pp 21–28 | Cite as

# Internet Traffic Intrusion Detection System Using Adaptive Neuro-Fuzzy Inference System

Mrudul Dixit & Rajashwini Ukarande ✉

Conference paper | First Online: 21 August 2018



Part of the Communications in Computer and Information Science book series (CCIS,volume 876)

## Abstract

Network security has become an important aspect in terms of confidentiality and integrity. To protect our system from these internet attacks, without any compromise on the security constraints, we have developed a system using the combination of two soft computing techniques, namely fuzzy and neural network. The designed system for intrusion detection is the Adaptive Neuro-Fuzzy Inference System (ANFIS), which detects whether the incoming data is normal or an attack. To train the system, we have used KDD dataset and to evaluate the performance parameters based on the confusion matrix generated. For the system to work with high accuracy, the True Negative Rate and True Positive Rate must be maximum. This paper compares the fuzzy and neural network techniques (developed previously) using the same dataset with that of neuro fuzzy. The paper mainly focuses on ANFIS and the concepts of fuzzy and neural network used to develop this system.

## Keywords

**Adaptive Neuro-Fuzzy Inference System** **KDD cup 99** **Denial of service** **Probe**

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Conferences > 2018 2nd International Confer...

# Detection of Dispersion in Crowd Scenes for Surveillance Applications

Publisher: IEEE | Cite This | PDF

Manasi Pathade ; Simran Mardhani ; Himaja Kadiyala ; Kshitija Shukla All Authors

70 Full Text Views

Abstract

Document Sections

I. Introduction

II. Detailed Design

III. Experimental Results

IV. Conclusion and Future Work

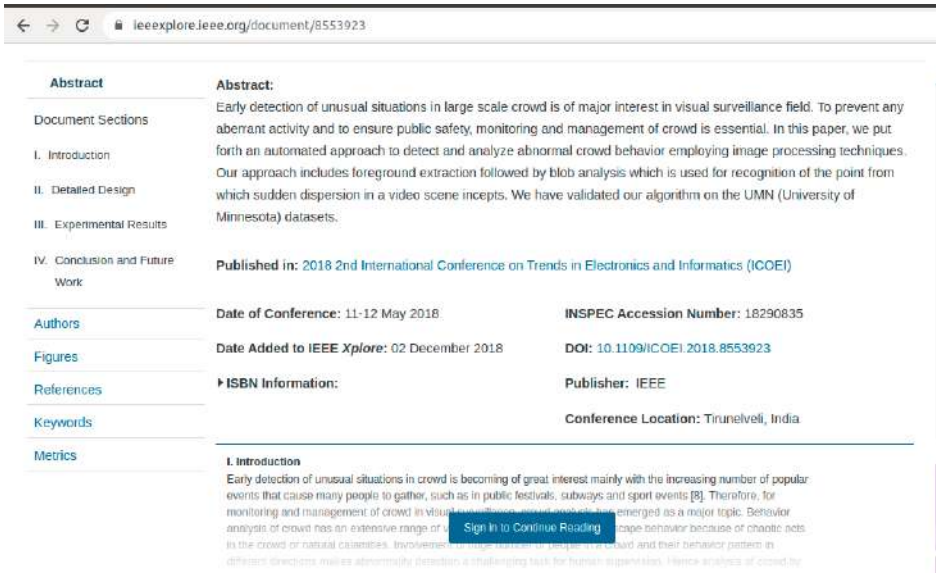
Authors

**Abstract:**
Early detection of unusual situations in large scale crowd is of major interest in visual surveillance field. To prevent any aberrant activity and to ensure public safety, monitoring and management of crowd is essential. In this paper, we put forth an automated approach to detect and analyze abnormal crowd behavior employing image processing techniques. Our approach includes foreground extraction followed by blob analysis which is used for recognition of the point from which sudden dispersion in a video scene incepts. We have validated our algorithm on the UMN (University of Minnesota) datasets.

**Published in:** 2018 2nd International Conference on Trends in Electronics and Informatics (ICOEI)

**Date of Conference:** 11-12 May 2018

**INSPEC Accession Number:** 18290835



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Abstract

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I. Introduction

II. Detailed Design

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Keywords

Metrics

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Early detection of unusual situations in large scale crowd is of major interest in visual surveillance field. To prevent any aberrant activity and to ensure public safety, monitoring and management of crowd is essential. In this paper, we put forth an automated approach to detect and analyze abnormal crowd behavior employing image processing techniques. Our approach includes foreground extraction followed by blob analysis which is used for recognition of the point from which sudden dispersion in a video scene incepts. We have validated our algorithm on the UMN (University of Minnesota) datasets.

**Published in:** 2018 2nd International Conference on Trends in Electronics and Informatics (ICOEI)

**Date of Conference:** 11-12 May 2018

**INSPEC Accession Number:** 18290835

**Date Added to IEEE *Xplore*:** 02 December 2018

**DOI:** 10.1109/ICOEI.2018.8553923

**ISBN Information:**

**Publisher:** IEEE

**Conference Location:** Tirunelveli, India

**I. Introduction**

Early detection of unusual situations in crowd is becoming of great interest mainly with the increasing number of popular events that cause many people to gather, such as in public festivals, subways and sport events [8]. Therefore, for monitoring and management of crowd in visual [illegible] emerged as a major topic. Behavior analysis of crowd has an extensive range of [illegible] cape behavior because of chaotic acts in the crowd or natural casualties. Involvement of huge number of people in a crowd and their behavior pattern in different directions makes abnormality detection a challenging task for human supervision. Hence analysis of crowd by

# Smart reader for visually impaired

Publisher: IEEE 

Sandeep Musale ; Vikram Ghiye All Authors



Abstract

Document Sections

I. Introduction

II. System Implementation

III. Algorithm

IV. System Development

IV. Conclusions

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**Abstract:**

Usually many people suffered from visual disabilities. Written transcript is an appearing form of information that is unapproachable by a lot of sightless and visually impaired except it is symbolized in a non-visual form like Braille. Smart reader is a need of an effective system for visually impaired. The OCR (Optical Character Recognition) functions of MATLAB for converting image to text. This paper proposes the smart reader system for visually impaired. Here proposed a novel audio-tactile user interface that supports the user to read the information.

**Published in:** 2018 2nd International Conference on Inventive Systems and Control (ICISC)

**Date of Conference:** 19-20 January 2018

**Date Added to IEEE *Xplore*:** 28 June 2018

**ISBN Information:**

**Electronic ISBN:**978-1-5386-0807-4

**DVD ISBN:**978-1-5386-0806-7

**Print on Demand(PoD) ISBN:**978-1-5386-0808-1

**INSPEC Accession Number:** 17879357

**DOI:** 10.1109/ICISC.2018.8399091

**Publisher:** IEEE

**Conference Location:** Coimbatore, India

# Implementation of Video Stabilization Algorithm for Surveillance System

**Publisher: IEEE**



Harshada Kawade ; Ashwini M. Deshpande **All Authors**



Abstract

Document Sections

I. Introduction

II. Literature Survey

III. Video Stabilization Technique

IV. Experimental Results

V. Conclusion

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**Abstract:**Aerial video surveillance plays an important role in gathering the information for the public as well as military applications. Now-a-days cameras used for capturing vide... **View more**

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**Abstract:**

Aerial video surveillance plays an important role in gathering the information for the public as well as military applications. Now-a-days cameras used for capturing video are of high quality, but because of the unintentional movement of cameras, the video gets unstabilized. The main aim of the video stabilization is to remove the unintentional motion and shakiness in the videos and preserve the desired motion. In this approach, speeded up robust features (SURF) and scale-invariant feature transform (SIFT) methods are used to detect and match the feature points of interest. The outliers and noise are removed using RANSAC, while affine transform is used to estimate the motion of the interest points. Finally, the video gets stabilized by compensating the global motion points obtained by the affine transform. These approaches for video stabilization show promising results in terms of Inter Transformation Fidelity (ITF) values for SURF and SIFT algorithms.

**Published in:** 2017 International Conference on Computing, Communication, Control and Automation (ICCUBEA)

# Digit Recognition Using Machine Learning and Convolutional Neural Network



Snehal R. Kalbhor ; Ashwini M. Deshpande All Authors



Abstract

Document Sections

I. Introduction

II. Literature Survey

III. Proposed Methodology

IV. Experimental Results

V. Conclusion and Future Scope

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**Abstract:**The purpose of the sign language recognition system is to establish communication with people having hearing and speech problem. The proposed system is implemented for re... **View more**

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**Abstract:**

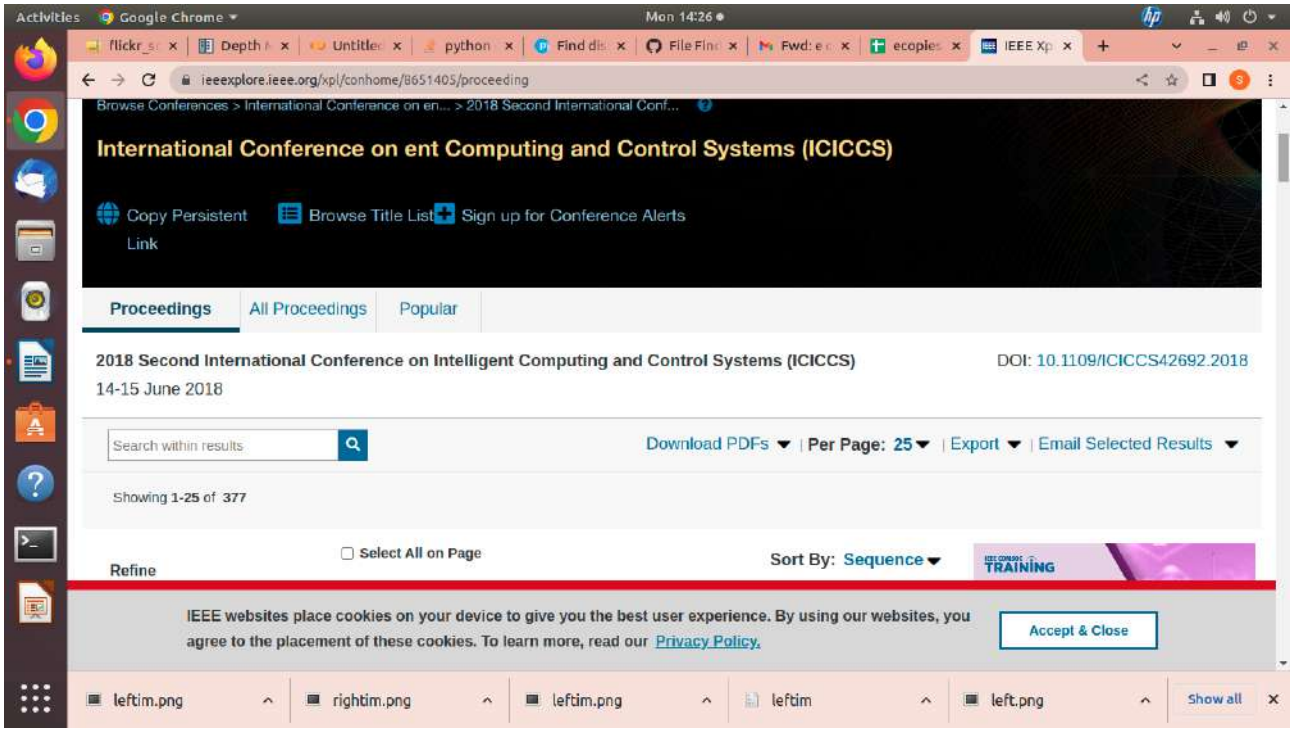
The purpose of the sign language recognition system is to establish communication with people having hearing and speech problem. The proposed system is implemented for recognition of 0-9 digits. In this paper, we compare the performance of two methods i.e. contour-SVM based method and convolutional Neural Network (CNN) method under different conditions like rotation, scaling with a constant background. These methods are applied on three standard databases-SLD, ASL and ASL-FS. In the contour-based method, we find the contour and draw convex hull. Gestures are recognized on the basis of length and angle of convex hull and SVM is used for classification purpose. CNN based method uses five convolutional layers are used to classify the digit data. The proposed algorithm achieves accuracy 69% for contour-SVM and 98.31% for CNN based approach.

**Published in:** 2018 2nd International Conference on Trends in Electronics and Informatics (ICOEI)

# Face Recognition Based Attendance System Using Machine Learning Algorithms



Radhika C. Damale ; Bazeshree. V Pathak All Authors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## Sections

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**Ambient Communications and Computer Systems** pp 69–80 | Cite as

# Enhancement of Microstrip Patch Antenna Parameters Using Defective Ground Structure

Mahesh K. Pote ✉ & Prachi Mukherji

Conference paper | First Online: 21 March 2018



Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 696)

## Abstract

Microstrip patch antenna is used with defective ground structure (DGS). In DGS, various types of defects can be made on the ground plane. The improved microstrip patch antenna (MPA) with enhanced parameters is proposed in this paper. The first design implemented is without DGS, the second design is with one slot of rectangular shape on the ground plane, and the third design is with two slots of rectangular shape on the ground plane. To improve return loss, VSWR, bandwidth of the proposed antennas, optimization of the antenna design parameters has been carried out using High Frequency Structure Simulator software. Microstrip patch

## About this paper


### Cite this paper

Pote, M.K., Mukherji, P. (2018). Enhancement of Microstrip Patch Antenna Parameters Using Defective Ground Structure. In: Perez, G., Tiwari, S., Trivedi, M., Mishra, K. (eds) Ambient Communications and Computer Systems. Advances in Intelligent Systems and Computing, vol 696. Springer, Singapore. https://doi.org/10.1007/978-981-10-7386-1_6

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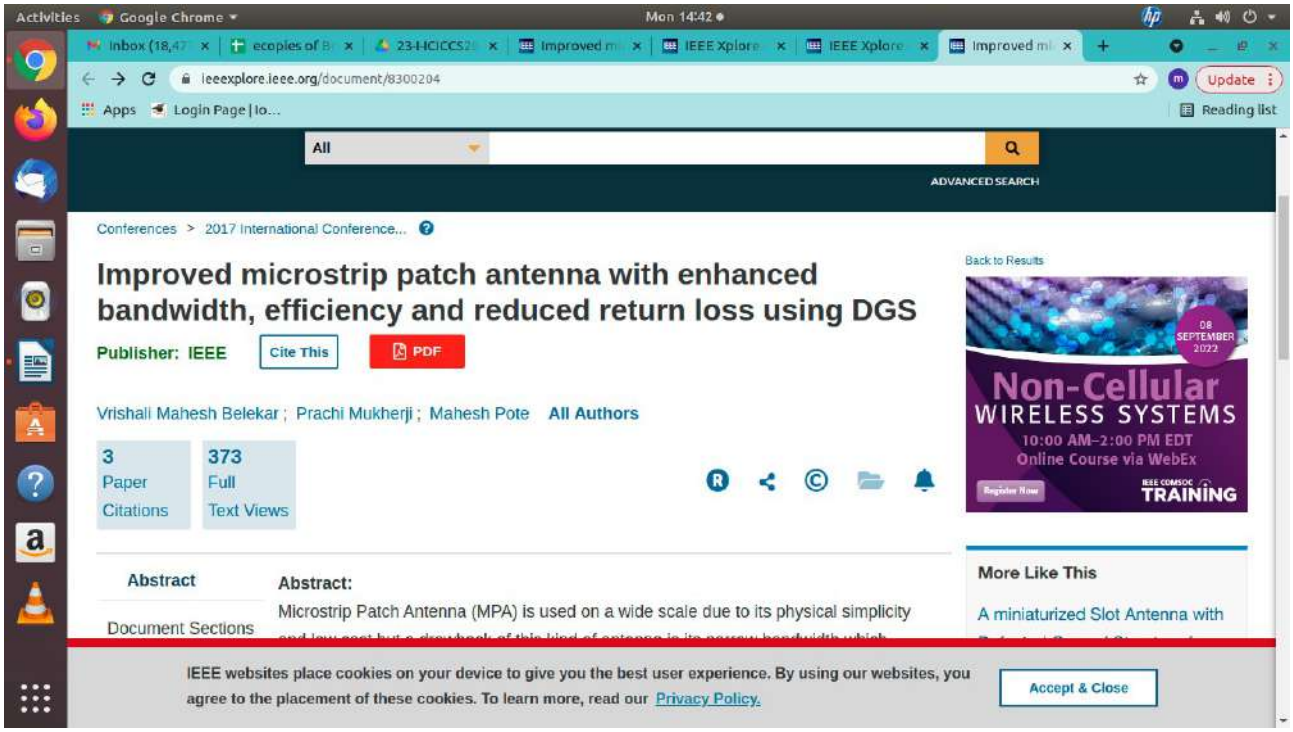


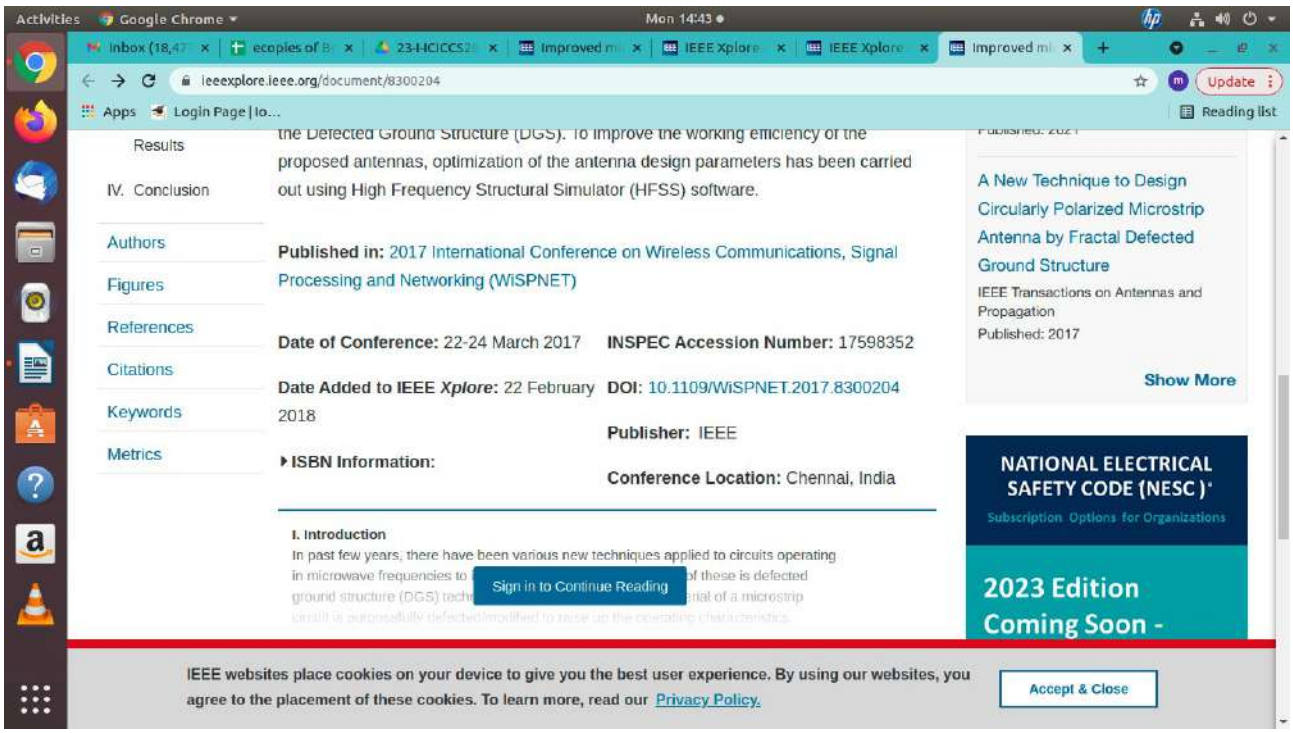

# Moving Object Detection and Tracking Using Convolutional Neural Networks

**Publisher: IEEE**



Shraddha Mane ; Supriya Mangale All Authors



Abstract

Document Sections

I. Introduction

II. Literature Survey

III. Methodology

IV. Results

V. Conclusion

Authors

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Keywords

Metrics

**Abstract:**

The object detection and tracking is the important steps of computer vision algorithm. The robust object detection is the challenge due to variations in the scenes. Another biggest challenge is to track the object in the occlusion conditions. Hence in this approach, the moving objects detection using TensorFlow object detection API. Further the location of the detected object is pass to the object tracking algorithm. A novel CNN based object tracking algorithm is used for robust object detection. The proposed approach is able to detect the object in different illumination and occlusion. The proposed approach achieved the accuracy of 90.88% on self generated image sequences.

**Published in:** 2018 Second International Conference on Intelligent Computing and Control Systems (ICICCS)

**Date of Conference:** 14-15 June 2018

**Date Added to IEEE *Xplore*:** 10 March 2019

**ISBN Information:**

**Electronic ISBN:**978-1-5386-2842-3

**DVD ISBN:**978-1-5386-2841-6

**Print on Demand(PoD) ISBN:**978-1-5386-2843-0

**INSPEC Accession Number:** 18510709

**DOI:** 10.1109/ICCONS.2018.8662921

**Publisher:** IEEE

**Conference Location:** Madurai, India

## I. Introduction

In last decade, number of approaches were proposed and demonstrated by different researchers for foreground detection and

# Derive Respiratory Signal Form ECG Using KPCA for Application of Sleep Apnea Detection

**Publisher:** IEEE

Cite This | PDF

Geetanjali E. Gangan ; Shashikant Sahare **All Authors**



Abstract

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I. Introduction

II. Methodology

III. Methodes for EDR Extraction

IV. Proposed Method

V. Results

Show Full Outline

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Keywords

Metrics

**Abstract:**
The respiratory system rate is an essential sign used to keep an eye on the progression of health issues and an abnormal breathing rate is an important marker of severe health issues, as it's far modulated by the fluctuations of the autonomic nervous system (ANS). It performs the important part in the detection of Sleep-associated respiration disorders like sleep apnea, stress level testing, and lots of different applications. Here, respiratory signal is extracted from ECG called as EDR using Kernel PCA algorithm. KPCA with a combination of different kernels give good quality surrogate respiratory signals. Cross-Correlation coefficient (c) and Magnitude squared coherence coefficient (msc) are utilized as evaluation parameters. RBF kernel gives better EDR signals than other kernels with c=0.82 and msc=0.98. Support Vector Machine (SVM) classifier is employed for detection of normal and diseased sample. SVM results Performance measures as the accuracy=40.8%, sensitivity = 80.6%, and specificity=79.8%.

**Published in:** 2018 Second International Conference on Intelligent Computing and Control Systems (ICICCS)

**Date of Conference:** 14-15 June 2018

**Date Added to IEEE *Xplore*:** 10 March 2019

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**Electronic ISBN:**978-1-5386-2842-3

**DVD ISBN:**978-1-5386-2841-6

**Print on Demand(PoD) ISBN:**978-1-5386-2843-0

**INSPEC Accession Number:** 18510839

**DOI:** 10.1109/ICCONS.2018.8663170

**Publisher:** IEEE

**Conference Location:** Madurai, India

# Derive Respiratory Signal Form ECG Using KPCA for Application of Sleep Apnea Detection

**Publisher:** IEEE

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Geetanjali E. Gangan ; Shashikant Sahare All Authors



Abstract

Document Sections

I. Introduction

II. Methodology

III. Methodes for EDR Extraction

IV. Proposed Method

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The respiratory system rate is an essential sign used to keep an eye on the progression of health issues and an abnormal breathing rate is an important marker of severe health issues, as it's far modulated by the fluctuations of the autonomic nervous system (ANS). It performs the important part in the detection of Sleep-associated respiration disorders like sleep apnea, stress level testing, and lots of different applications. Here, respiratory signal is extracted from ECG called as EDR using Kernel PCA algorithm. KPCA with a combination of different kernels give good quality surrogate respiratory signals. Cross-Correlation coefficient (c) and Magnitude squared coherence coefficient (msc) are utilized as evaluation parameters. RBF kernel gives better EDR signals than other kernels with c=0.82 and msc=0.98. Support Vector Machine (SVM) classifier is employed for detection of normal and diseased sample. SVM results Performance measures as the accuracy=40.8%, sensitivity = 80.6%, and specificity=79.8%.

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**Print on Demand(PoD) ISBN:**978-1-5386-2843-0

**INSPEC Accession Number:** 18510839

**DOI:** 10.1109/ICCONS.2018.8663170

**Publisher:** IEEE

**Conference Location:** Madurai, India

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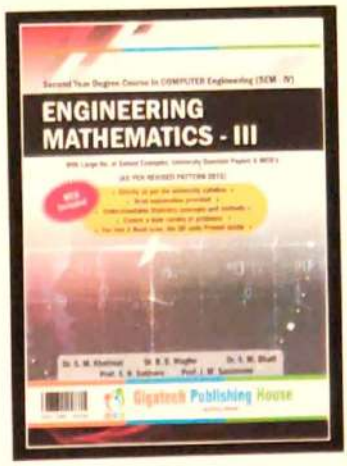



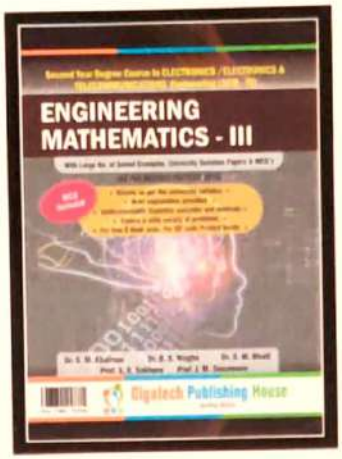



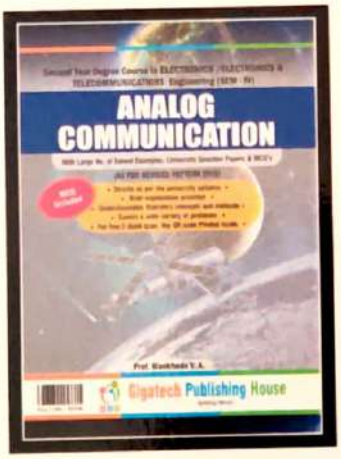


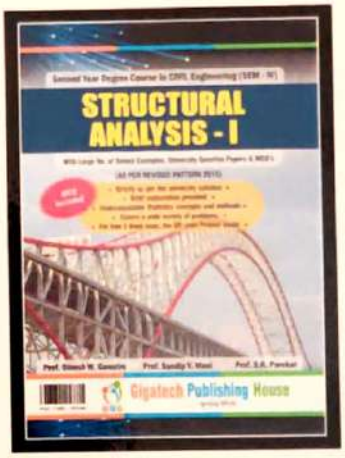


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