



M.S.P. Mandal's  
**Shri Shivaji Institute of Engineering & Management Studies,**  
**Vasmat Road, Parbhani – 431 401 (M.S.).**

Ph. (02452) 234109, Fax (02452) 221958

Email: [director.ssiems@gmail.com](mailto:director.ssiems@gmail.com) web: [www.ssiems.org.in](http://www.ssiems.org.in)

DTE Code: 2252

University Code: 2252

Shri. Prakash Solanke  
President

Shri. Satish Chavan  
Secretary

Shri. Anil Nakhate  
Joint Secretary

Dr. Anand K. Pathrikar  
Director

### DVV Clarifications

#### 3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years

DVV Clarifications	HEI Response
HEI is requested to provide the cover page, table of contents, and the first page of the referenced publications. Special attention should be given to accurately highlighting the author(s) name(s), the name of HEI, and the year of publication.	HEI provided the cover page, table of contents, and the first page of the referenced publications. Special attention should be given to accurately highlighting the author(s) name(s) and the year of publication.

# Cover Page

# Advances in Intelligent Systems and Computing

Volume 1025

## Series Editor

Janusz Kacprzyk, Systems Research Institute, Polish Academy of Sciences,  
Warsaw, Poland

## Advisory Editors

Nikhil R. Pal, Indian Statistical Institute, Kolkata, India  
Rafael Bello Perez, Faculty of Mathematics, Physics and Computing,  
Universidad Central de Las Villas, Santa Clara, Cuba  
Emilio S. Corchado, University of Salamanca, Salamanca, Spain  
Hani Hagra, School of Computer Science and Electronic Engineering,  
University of Essex, Colchester, UK  
László T. Kóczy, Department of Automation, Széchenyi István University,  
Gyor, Hungary  
Vladik Kreinovich, Department of Computer Science, University of Texas  
at El Paso, El Paso, TX, USA  
Chin-Teng Lin, Department of Electrical Engineering, National Chiao  
Tung University, Hsinchu, Taiwan  
Jie Lu, Faculty of Engineering and Information Technology,  
University of Technology Sydney, Sydney, NSW, Australia  
Patricia Melin, Graduate Program of Computer Science, Tijuana Institute  
of Technology, Tijuana, Mexico  
Nadia Nedjah, Department of Electronics Engineering, University of Rio de Janeiro,  
Rio de Janeiro, Brazil  
Ngoc Thanh Nguyen, Faculty of Computer Science and Management,  
Wrocław University of Technology, Wrocław, Poland  
Jun Wang, Department of Mechanical and Automation Engineering,  
The Chinese University of Hong Kong, Shatin, Hong Kong



  
Director  
M.S.P. Mandal's  
Shri Shilvaji Institute of Engineering  
and Management Studies, Parbhani

The series "Advances in Intelligent Systems and Computing" contains publications on theory, applications, and design methods of Intelligent Systems and Intelligent Computing. Virtually all disciplines such as engineering, natural sciences, computer and information science, ICT, economics, business, e-commerce, environment, healthcare, life science are covered. The list of topics spans all the areas of modern intelligent systems and computing such as: computational intelligence, soft computing including neural networks, fuzzy systems, evolutionary computing and the fusion of these paradigms, social intelligence, ambient intelligence, computational neuroscience, artificial life, virtual worlds and society, cognitive science and systems, Perception and Vision, DNA and immune based systems, self-organizing and adaptive systems, e-Learning and teaching, human-centered and human-centric computing, recommender systems, intelligent control, robotics and mechatronics including human-machine teaming, knowledge-based paradigms, learning paradigms, machine ethics, intelligent data analysis, knowledge management, intelligent agents, intelligent decision making and support, intelligent network security, trust management, interactive entertainment, Web intelligence and multimedia.

The publications within "Advances in Intelligent Systems and Computing" are primarily proceedings of important conferences, symposia and congresses. They cover significant recent developments in the field, both of a foundational and applicable character. An important characteristic feature of the series is the short publication time and world-wide distribution. This permits a rapid and broad dissemination of research results.

**\*\* Indexing: The books of this series are submitted to ISI Proceedings, EI-Compendex, DBLP, SCOPUS, Google Scholar and Springerlink \*\***

More information about this series at <http://www.springer.com/series/11156>



*M.S.P. Mandal*  
Director  
M.S.P. Mandal's  
Shri Shivaji Institute of Engineering  
and Management Studies, Parbhani

Brijesh Iyer · P. S. Deshpande ·  
S. C. Sharma · Ulhas Shiurkar  
Editors

# Computing in Engineering and Technology

Proceedings of ICCET 2019



*M.S.P. Mandal*  
Director

M.S.P. Mandal's  
Shri Shivaji Institute of Engineering  
and Management Studies, Parbhani

 Springer



*Editors*

Brijesh Iyer  
Department of Electronics and  
Telecommunication Engineering  
Dr. Babasaheb Ambedkar  
Technological University  
Lonere, Maharashtra, India

S. C. Sharma  
Department of Electronics  
and Computer Engineering  
Indian Institute of Technology Roorkee  
Roorkee, Uttarakhand, India

P. S. Deshpande  
Department of Computer Engineering  
Dr. Babasaheb Ambedkar  
Technological University  
Lonere, Maharashtra, India

Ulhas Shiurkar  
Deogiri Institute of Engineering  
and Management Studies  
Aurangabad, Maharashtra, India

ISSN 2194-5357 ISSN 2194-5365 (electronic)  
Advances in Intelligent Systems and Computing  
ISBN 978-981-32-9514-8 ISBN 978-981-32-9515-5 (eBook)  
<https://doi.org/10.1007/978-981-32-9515-5>

© Springer Nature Singapore Pte Ltd. 2020

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd. The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore



*M.S.R. Mandale*  
Director  
M.S.R. Mandale's  
Shri Shivaji Institute of Engineering  
and Management Studies, Parbhani

*Editors*

Brijesh Iyer  
Department of Electronics and  
Telecommunication Engineering  
Dr. Babasaheb Ambedkar  
Technological University  
Lonere, Maharashtra, India

S. C. Sharma  
Department of Electronics  
and Computer Engineering  
Indian Institute of Technology Roorkee  
Roorkee, Uttarakhand, India

P. S. Deshpande  
Department of Computer Engineering  
Dr. Babasaheb Ambedkar  
Technological University  
Lonere, Maharashtra, India

Ulhas Shiurkar  
Deogiri Institute of Engineering  
and Management Studies  
Aurangabad, Maharashtra, India

ISSN 2194-5357 ISSN 2194-5365 (electronic)  
Advances in Intelligent Systems and Computing  
ISBN 978-981-32-9514-8 ISBN 978-981-32-9515-5 (eBook)  
<https://doi.org/10.1007/978-981-32-9515-5>

© Springer Nature Singapore Pte Ltd. 2020

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd. The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore



*M.S.P. Mandal*  
Director  
M.S.P. Mandal's  
Shri Shivaji Institute of Engineering  
and Management Studies, Parbhani

# Contents



## Contents

<b>Comparison of Different Signal Processing Techniques Used for Extraction of Breathing Frequency of Human Being Hidden Behind a Wall</b> .....	1
Abhay N. Gaikwad	
<b>IRNSS Constellation Optimization: A Multi-objective Genetic Algorithm Approach</b> .....	11
Bidyut B. Gogoi, Anita Kumari, Nirmala S. and A. Kartik	
<b>Design and Development of Composite Clock-Based Reliable Timing Reference for IRNSS</b> .....	21
Anita Kumari, Kalasagar Varma, Umesh Swami and A. Kartik	
<b>Radon and Multiwavelet-Based Compact Feature Vector Generation for Gender Identification from Iris</b> .....	29
Ganesh S. Sable and Minakshi R. Rajput	
<b>Biometric Finger Vein Recognition Methods for Authentication</b> .....	45
Dnyaneshwari P. Wagh, H. S. Fadewar and G. N. Shinde	
<b>Real Time Face Tracking and Recognition Using Efficient Face Descriptor and Features Extraction Algorithms</b> .....	55
Shashikant R. Dikle and Ulhas D. Shiurkar	
<b>Novel Method to Detect Multiple Cloning in Targeted Image Invariant to Rotation</b> .....	65
Kshipra Ashok Tatkare and Manoj Devare	
<b>IEEE 754-Based Single- and Double-Precision Floating-Point Multiplier Analysis</b> .....	75
Shoaib Arif Shaikh, B. B. Godbole and Ulhas D. Shiurkar	
<b>Strengthening Elliptic Curve Cryptography—Key Generation via Biometric Fusion Approach</b> .....	87
Yogita S. Pagar and G. V. Chowdhary	



*P. B. Shinde*  
Director  
Shri Shivaji Institute of Engineering  
Management Studies, Parbhani

<b>Segmentation, Detection, and Classification of Liver Tumors for Designing a CAD System</b> .....	103
Rahul Singh G. Bisen, Archana M. Rajurkar and R. R. Manthalkar	
<b>Sensing Matrices in Compressed Sensing</b> .....	113
Yuvraj V. Parkale and Sanjay L. Nalbalwar	
<b>Election-Quorum-Based Coordinator Election Algorithm for Distributed Systems</b> .....	125
Shital Supase and Rajesh Ingle	
<b>A Comparative Approach to Secure Data Storage Model in Hadoop Framework</b> .....	135
K. Vishal Reddy, Jayantrao B. Patil and Ratnadeep R. Deshmukh	
<b>Learning Preferences Analysis by Case-Based Reasoning</b> .....	145
Swati Shekapure and Dipti D. Patil	
<b>Optimal Solution for Fuzzy Assignment Problem and Applications</b> .....	155
Sanjivani M. Ingle and Kirtiwant P. Ghadle	
<b>Light Scattering Study on Protocols and Simulators Used in Automotive Application(s)</b> .....	165
Umesh B. Pawar, Sunil G. Bhirud and Satish R. Kolhe	
<b>An Energy-Efficient MAC Protocols for Wireless Sensor Networks</b> .....	177
Smita Ponde and Santosh Lomte	
<b>Statistical Approach to Predict Road Accidents in India</b> .....	189
Yash Kumar Arora and Santosh Kumar	
<b>Enhancing GPU Performance Using Thread Geometry Analysis for Irregular Workloads</b> .....	197
P. S. Tamizharasan and N. Ramasubramanian	
<b>Cloud of Everything (CLeT): The Next-Generation Computing Paradigm</b> .....	207
Prachi Deshpande	
<b>Towards Feature Selection for Detection of DDoS Attack</b> .....	215
Anuja Patil and Deepak Kshirsagar	
<b>Credit Card Fraud Detection</b> .....	225
Ruchika Janbandhu, Shameedha Begum and N. Ramasubramanian	
<b>Enhanced Strict Binary Logical Key Hierarchy Algorithm for Secure Group Communication</b> .....	239
Aparna S. Pande, Yashwant V. Joshi and Manisha Y. Joshi	



*A.S.P. Mandal*  
 Director  
 A.S.P. Mandal's  
 Shri Shivaji Institute of Engineering  
 and Management Studies, Parbhani

<b>Game Theory Based Offload and Migration-Enabled Smart Gateway for Cloud of Things in Fog Computing</b> .....	253
S. Balasubramanian and T. Meyyappan	
<b>Prioritized ViU Departure at Traffic Intersection Using Internet of Things</b> .....	267
Vijay D. Chaudhari and Anil J. Patil	
<b>Secure and Efficient Outsourcing of Large Scale Linear Fractional Programming</b> .....	277
Nedal M. Mohammed and Santosh S. Lomte	
<b>Malware Detection in Android Using Machine Learning on Chip</b> .....	287
M. Abhijith, Bhukya Krishna Priya and N. Ramasubramanian	
<b>Real-Time DDoS Detection Based on Entropy Using Hadoop Framework</b> .....	297
Arushi Sharma, Charul Agrawal, Aditya Singh and Krishan Kumar	
<b>Secure Request Response (SRR): A Framework to Classify Trust/Distrust Relationships in Social Networking</b> .....	307
Neethu MR and N. Harini	
<b>Disease Risk Prediction from Clinical Texts</b> .....	319
Bhagya Presannan, N. Ramasubramanian and A. Santhana Vijayan	
<b>Bug Severity Classification Using Semantic Feature with Convolution Neural Network</b> .....	327
Ambuj Chauhan and Rakesh Kumar	
<b>Design and Analysis of Sign Language Gesture Recognition as Text: A Redesigned Artificial Neural Network Approach</b> .....	337
Anita S. Walde and Ulhas D. Shiurkar	
<b>Approximating the Bounds for Number of Partially Ordered Sets with n Labeled Elements</b> .....	349
Narendrakumar R. Dasre and Pritam Gujarathi	
<b>Text Summarization Technique by Sentiment Analysis and Cuckoo Search Algorithm</b> .....	357
Shrabanti Mandal, Girish Kumar Singh and Anita Pal	
<b>Clustering-Based Hybrid Approach for Multiclass Classification Using SVM</b> .....	367
Rahul Kumar Jain and Girish Kumar Singh	
<b>Optimal Solution Solved by Triangular Intuitionistic Fuzzy Transportation Problem</b> .....	379
Priyanka A. Pathade, Kirtiwant P. Ghadle and Ahmed A. Hamoud	



*M.S.P. Mandal*  
 Director  
 M.S.P. Mandal's  
 Shivaji Institute of Engineering  
 and Management Studies, Parbhani



<b>Optimal Solution of Fully Fuzzy LPP with Symmetric HFNs</b> .....	387
Mayuri C. Deshmukh, Kirtiwant P. Ghadle and Omprakash S. Jadhav	
<b>Resource-Based Modeling of Applications on Multi-cores Using Adapted Tilman Model</b> .....	397
Preeti Nitin Jain, Dinesh Kumar Gautam and Sunil K. Surve	
<b>Comparison of Neural Network Training Functions for Prediction of Outgoing Longwave Radiation over the Bay of Bengal</b> .....	411
Kanchan V. Shende, M. R. Ramesh Kumar and K. V. Kale	
<b>Decision-Making Problem Using Fuzzy TOPSIS Method with Hexagonal Fuzzy Number</b> .....	421
Naziya Parveen and P. N. Kamble	
<b>Doppler Effect Analysis for Polar Code Based 5G Networks</b> .....	431
N. Madhusudhanan and R. Venkateswari	
<b>A Hybrid Stemmer for the Affix Stacking Language: Marathi</b> .....	441
Harshali B. Patil and Ajay S. Patil	
<b>Performance Analysis of Amplify and Forward Relay Network over <math>\kappa</math>-<math>\mu</math> Channel</b> .....	451
Dilip Mandloi and Rajeev Arya	
<b>A Study of KNN Classifier to Predict Water Pollution Index</b> .....	457
Savita Mohurle and Manoj Devare	
<b>Performance Analysis of Parallel and Scalable GPU Based Convolutional Neural Network</b> .....	467
Umesh Chavan and Dinesh Kulkarni	
<b>Parallelizing Neural Network Learning to Build Safe Trained Model</b> .....	479
Suhel Sayyad and Dinesh Kulkarni	
<b>Mining Weakly Labeled Web Facial Images for Search-Based Face Annotation Using Neural Network Classifier</b> .....	489
A. A. Kale and A. F. N. Mulla	
<b>Minority-Majority Mix mean Oversampling Technique: An Efficient Technique to Improve Classification of Imbalanced Data Sets</b> .....	501
Sachin Patil and Shefali Sonavane	
<b>Hybrid Deep Learning Approach for Classifying Alzheimer Disease Based on Multimodal Data</b> .....	511
Arifa Shikalgar and Shefali Sonavane	
<b>Application of Linguistic Knowledge in Factored Language Modeling for Hindi Language</b> .....	521
Arun R. Babhulgaonkar and Shefali P. Sonavane	



*(Signature)*  
 Director  
 M.S.P. Mandal's  
 Shri Shivaji Institute of Engineering  
 and Management Studies, Parbhani

Contents	xi
<b>Towards Designing Conversational Agent Systems</b> .....	533
Komal P. Jadhav and Sandeep A. Thorat	
<b>Semantic Rules-Based Classification of Outdoor Natural Scene Images</b> .....	543
C. A. Laukar and P. J. Kulkarni	
<b>Automatic Feature Extraction for CBIR and Image Annotation Applications</b> .....	557
S. B. Nemade and S. P. Sonavane	
<b>Template Based Clustering of Web Documents Using Locality Sensitive Hashing (LSH)</b> .....	567
Tanveer I. Bagban and Prakash J. Kulkarni	
<b>Cheating Prevention in Improved Extended Progressive Visual Cryptography Scheme</b> .....	585
Suhas B. Bhagate and Prakash J. Kulkarni	
<b>Prediction of Pregnancy-Induced Hypertension Levels Using Machine Learning Algorithms</b> .....	597
Anuja Hiwale, Pratvina Talele and Rashmi Phalnikar	
<b>Dynamic Equivalent Circuit for 4 KW Switched Reluctance Motor</b> .....	609
R. M. Autee, S. B. Kalyankar and Ulhas D. Shiurkar	
<b>FPGA-Based Real-Time Simulation of Grid Interaction Using Cascaded H-Bridge Multilevel Inverter</b> .....	617
Mithun G. Aush and K. Vadirajacharya	
<b>Design of Power-Efficient 5- to 32-Row Decoder for 1 KB SRAM Using VLSI Technology</b> .....	625
A. K. Pathrikar and Rajkumar S. Deshpande	
<b>FPGA-Based High-Performance Computing Platform for Cryptanalysis of AES Algorithm</b> .....	637
Harshali Zodpe and Ashok Sapkal	
<b>Comparative Analysis of Fractional-Order PID Controller for Pitch Angle Control of Wind Turbine System</b> .....	647
Shivaji Karad and Ritula Thakur	
<b>Performance Analysis of Reversible Logic-Based Full Adder Using BSIM4 Model</b> .....	659
Shivani Horke, Manisha Waje and Rupali Patil	
<b>SET-CMP: Improving the Lifetime of NVM Cache</b> .....	667
Bhukya Krishna Priya and N. Ramasubramanian	



*Shiwale*  
Director

M.S.P. Mandal's  
Shri Shivaji Institute of Engineering  
and Management Studies, Parbhani



<b>An Experimental Analysis and Effect of Microwave Radiation to Human Brain Cells and Its Ramification Using Different Anti-radiation Strips</b> .....	677
D. S. Bhangari, A. C. Bhagali and R. V. Kshirsagar	
<b>Design of UWB Monopole Antenna Using Complementary Stubs to Get Dual Notch</b> .....	687
Harshali B. Bapat, Vijaya N. Kamble and Maruti Tamrakar	
<b>2 × 2 Microstrip Patch Antenna Array by Using Compact Hybrid Feed for Millimeter Wave Application</b> .....	697
Sujata D. Mendgudle and Manmohan Singh Bhatia	
<b>Design of Microstrip Line BPF and Preamplifier for Adaptive Antenna System</b> .....	709
Shankar B. Deosarkar, Vidya P. Kodgirwar and Kalyani R. Joshi	
<b>Design Study and Feasibility of Hyperthermia Technique</b> .....	721
Jaswantsing Rajput, Anil Nandgaonkar, Sanjay Nalbalwar and Abhay Wagh	
<b>Performance Appraisal of an Educational Institute Using Data Mining Techniques</b> .....	733
Renuka Agrawal, Jyoti Singh and S. M. Ghosh	
<b>Evaluating Effectiveness of AMFI Campaigns: A Study Based on AIDA Model</b> .....	747
Medha Kulkarni, Gurpreet Attal and Vaibhav Vasundekar	
<b>Role of Corporate Mentoring in Talent Development</b> .....	763
Jyoti Munde, Roger Ingles, Chandrakant Phad and Vaibhav Vasundekar	
<b>Feature-Opinion Co-extraction Based Upon Genuine Score Analysis</b> .....	771
Sugandha Nandedkar and Jayantrao Patil	
<b>Performance Assessment and Remedies Using Blended Learning for Professional Students</b> .....	783
Sushama Deshpande and Amit Shesh	
<b>Study of Flexural Behavior of Artificially Degraded Steel I Section Externally Bonded with GFRP, BFRP and CFRP by Using FEM</b> .....	791
S. K. Kamane and N. K. Patil	
<b>DMAIC Approach to Improve Carbon Weighing Compliance of Banburry Machine</b> .....	803
Saurabh Vaidya, Santosh Bhosle and Prashant Ambad	



*M.S.P. Mandal*  
 Director  
 M.S.P. Mandal's  
 Shivaji Institute of Engineering  
 Management Studies, Parbhani

<b>Detection of Dielectric Properties of Fluids Using Various Techniques</b> .....	817
D. M. Dharmadhikari and S. N. Helambe	
<b>A Review on Grinding Machining for Al Composites</b> .....	827
Dipalee H. Bhuigad and D. S. Khedekar	
<b>Experimental Investigation of Diesel Engine Performance by Using Mixtures of Diesel, Biodiesel and Zinc, and Copper Oxide Nanoparticles</b> .....	835
Meera Randive, S. T. Dhande and M. D. Shende	
<b>Assessment of Average Resistive Torque for Human-Powered Stirrup Making Process</b> .....	845
Subhash N. Waghmare, Chandrashekhar N. Sakhale, Chetan K. Tembhurkar and Sagar D. Shelare	
<b>Automatic Interacting Hole Suppression from CAD Mesh Models</b> .....	855
Vaibhav J. Hase, Yogesh J. Bhalerao, Saurabh Verma and Vishnu D. Wakchaure	
<b>Mathematical Model for Convective Heat Transfer Coefficient During Solar Drying Process of Green Herbs</b> .....	867
Sanjay Mowade, Subhash Waghmare, Sagar Shelare and Chetan Tembhurkar	
<b>Experimental Investigation of Surface Roughness in Micromilling of Inconel 718 by Fiber Laser Machine</b> .....	879
Sachin Borse and M. S. Kadam	
<b>Intelligent Threshold Prediction for Hybrid Mesh Segmentation Through Artificial Neural Network</b> .....	889
Vaibhav J. Hase, Yogesh J. Bhalerao, G. J. Vikhe Patil and Mahesh P. Nagarkar	
<b>Microstructural and Mechanical Behavior Studies of Dissimilar Weld on TIG Welding</b> .....	901
Tejas Baliram Patil, S. G. K. Manikandan, Yogesh E. Mangulkar and Pradip L. Gade	
<b>Author Index</b> .....	911



*M.S.P. Mandal*  
Director


M.S.P. Mandal's  
Shri Shivaji Institute of Engineering  
and Management Studies, Parbhani

# **First Page of Referenced Publications**

# Design of Power-Efficient 5- to 32-Row Decoder for 1 KB SRAM Using VLSI Technology

Conference paper | First Online: 17 October 2019

pp 625–636 | [Cite this conference paper](#)

A. K. Pathrikar  & [Rajkumar S. Deshpande](#)

 Part of the book series: [Advances in Intelligent Systems and Computing](#) ((AISC, volume 1025))

 1114 Accesses

## Abstract

In this paper we have designed power-efficient 5–32-row decoder, which is further going to be used as a component in 1 KB SRAM. The schematics of all the components of 5–32-row decoder are primarily designed and simulated using advanced design system (ADS) and the layouts of all components are then implemented and analyzed at chip level using Microwind 3.1-a layout editor. The 45 and 32 nm technologies are used to design and analyze scaling effect and performance of row decoder. Our focus will be to reduce the size, improve the power consumption and also to improve the response time of row decoder. The analysis proves that the performance parameters, that is, size, power consumption, access time, speed and frequency, of the 5–32-row decoder are improved approximately 30%. Hence the technology scaling, that is, 45 and 32 nm increases the overall performance by 30%.

**Highlighting the author name**



<b>Towards Designing Conversational Agent Systems</b> .....	533
Komal P. Jadhav and Sandeep A. Thorat	
<b>Semantic Rules-Based Classification of Outdoor Natural Scene Images</b> .....	543
C. A. Laukar and P. J. Kulkarni	
<b>Automatic Feature Extraction for CBIR and Image Annotation Applications</b> .....	557
S. B. Nemade and S. P. Sonavane	
<b>Template Based Clustering of Web Documents Using Locality Sensitive Hashing (LSH)</b> .....	567
Tanveer I. Bagban and Prakash J. Kulkarni	
<b>Cheating Prevention in Improved Extended Progressive Visual Cryptography Scheme</b> .....	585
Suhas B. Bhagate and Prakash J. Kulkarni	
<b>Prediction of Pregnancy-Induced Hypertension Levels Using Machine Learning Algorithms</b> .....	597
Anuja Hiwale, Pratvina Talele and Rashmi Phalnikar	
<b>Dynamic Equivalent Circuit for 4 KW Switched Reluctance Motor</b> ....	609
R. M. Autee, S. B. Kalyankar and Ulhas D. Shiurkar	
<b>FPGA-Based Real-Time Simulation of Grid Interaction Using Cascaded H-Bridge Multilevel Inverter</b> .....	617
Mithun G. Aush and K. Vadirajacharya	
<b>Design of Power-Efficient 5- to 32-Row Decoder for 1 KB SRAM Using VLSI Technology</b> .....	625
A. K. Pathrikar and Rajkumar S. Deshpande	
<b>FPGA-Based High-Performance Computing Platform for Cryptanalysis of AES Algorithm</b> .....	637
Harshali Zodpe and Ashok Sapkal	
<b>Comparative Analysis of Fractional-Order PID Controller for Pitch Angle Control of Wind Turbine System</b> .....	647
Shivaji Karad and Ritula Thakur	
<b>Performance Analysis of Reversible Logic-Based Full Adder Using BSIM4 Model</b> .....	659
Shivani Horke, Manisha Waje and Rupali Patil	
<b>SET-CMP: Improving the Lifetime of NVM Cache</b> .....	667
Bhukya Krishna Priya and N. Ramasubramanian	



*(Signature)*  
 Director  
 M.S.P. Mandal's  
 Shri Shivaji Institute of Engineering  
 and Management Studies, Parbhani