Contents

Experimental Analysis on Big Data in IOT-Based Architecture ........ 1
Anupam Bera, Anirban Kundu, Nivedita Ray De Sarkar
and De Mou

Morphology Based Approach for Number Plate Extraction .............. 11
Chetan Pardeshi and Priti Rege

NeSeDroid—Android Malware Detection Based on Network
Traffic and Sensitive Resource Accessing ............................ 19
Nguyen Tan Cam and Nguyen Cam Hong Phuoc

RiCoBiT—Ring Connected Binary Tree: A Structured
and Scalable Architecture for Network-on-Chip Based Systems:
an Exclusive Summary ............................................... 31
V. Sanju and Niranjan Chiplunkar

Application of Compressed Sensing (CS) for ECG Signal
Compression: A Review ........................................... 53
Yuvraj V. Parkale and Sanjay L. Nalbalwar

Tracking Pointer Based Approach for Iceberg Query Evaluation ...... 67
Kale Sarika Prakash and P.M.J. Pratap

Performance Evaluation of Shortest Path Routing Algorithms
in Real Road Networks ............................................ 77
Nishtha Kesswani

An Outlook in Some Aspects of Hybrid Decision Tree Classification
Approach: A Survey ................................................. 85
Archana Panhalkar and Dharmpal Doye

Content Search Quaternary Look-Up Table Architecture ............ 97
D.P. Borkute, P.K. Dakhole and Nayan Kumar Nawre
Exhaust Gas Emission Analysis of Automotive Vehicles Using FPGA ................................................ 109
Ratan R. Tatikonda and Vinayak B. Kulkarni

A Graph-Based Active Learning Approach Using Forest Classifier for Image Retrieval ........................................... 119
Shrikant Dhawale, Bela Joglekar and Parag Kulkarni

Comparative Analysis of Android Malware Detection Techniques .... 131
Nishant Painter and Bintu Kadhiwala

Developing Secure Cloud Storage System Using Access Control Models ................................................................. 141
S.A. Ubale, S.S. Apte and J.D. Bokefode

ETLR—Effective DWH Design Paradigm ..................................... 149
Sharma Sachin and Kumar Kamal

Prediction of Reactor Performance in CATSOL-Based Sulphur Recovery Unit by ANN ........................................ 159
Gunjan Chhabra, Aparna Narayanan, Ninni Singh and Kamal Preet Singh

A Multilevel Clustering Using Multi-hop and Multihead in VANET ................................................................. 171
G. Shanmugasundaram, P. Thiyagarajan, S. Tharani and R. Rajavandhini

Patient-Specific Cardiac Computational Modeling Based on Left Ventricle Segmentation from Magnetic Resonance Images ........ 179
Anupama Bhan, Disha Bathla and Ayush Goyal

A Cryptographic Key Generation on a 2D Graphics Using RGB Pixel Shuffling and Transposition ...................... 189
Londhe Swapnali, Jagtap Megha, Shinde Ranjeet, P.P. Belsare and Gavali B. Ashwini

Methods for Individual and Group Decision Making Using Interval-Valued Fuzzy Preference Relations ................ 197
B.K. Tripathy, Viraj Sahai and Neha Kaushik

A New Approach to Determine Tie-Line Frequency Bias (B) in Interconnected Power System with Integral Control AGC Scheme ........................................ 207
Charudatta Bangal

Significance of Frequency Band Selection of MFCC for Text-Independent Speaker Identification .................... 217
S.B. Dhonde and S.M. Jagade
Ensuring Performance of Graphics Processing Units: A Programmer’s Perspective ........................................ 225
Mayank Varshney, Shashidhar G. Koolagudi, Sudhakar Velusamy and Pravin B. Ramteke

Analytical Study of Miniaturization of Microstrip Antenna for Bluetooth/WiMax ........................................ 237
Pranjali Jumle and Prasanna Zade

Novel All-Optical Encoding and Decoding Scheme for Code Preservation ........................................ 245
Varinder Kumar Verma, Ashu Verma, Abhishek Sharma and Sanjeev Verma

XPM-Based Bandwidth Efficient WDM-to-OTDM Conversion Using HNLF ........................................ 253
Abhishek Sharma and Sushil Kakkar

Analysis of a Sporting Event on a Social Network: True Popularity & Popularity Bond .......................... 261
Anand Gupta, Nitish Mittal and Neeraj Kohli

Performance Analysis of LPC and MFCC Features in Voice Conversion Using Artificial Neural Networks ............ 275
Shashidhar G. Koolagudi, B. Kavya Vishwanath, M. Akshatha and Yarlagadda V.S. Murthy

Moiz Hussain and Govind Kharat

Improvisation in Frequent Pattern Mining Technique ............................................................... 295
Sagar Gajera and Manmay Badheka

Design and Simulation of Hybrid SETMOS Operator Using Multiple Value Logic at 120 nm Technology .......... 305
Raut Vaishali and P.K. Dakhole

Detailed Survey on Attacks in Wireless Sensor Network ............................................................... 319
A.R. Dhakne and P.N. Chatur

Comparative Analysis of Frontal Face Recognition Using Radial Curves and Back Propagation Neural Network ........ 333
Latasha Keshwani and Dnyandeo Pete

Data Perturbation: An Approach to Protect Confidential Data in Cloud Environment ............................... 345
Dipali Darpe and Jyoti Nighot
Biologically Inspired Techniques for Cognitive Decision-Making .......................... 353
Ashish Chandiok and D.K. Chaturvedi

Analysis of Edge Detection Techniques for Side Scan Sonar Image Using Block Processing and Fuzzy Logic Methods .......................... 363
U. Anitha and S. Malarkkan

Leveraging Virtualization for Optimal Resource Management in a Cloud Environment ......................................................... 371
Dhrub Kumar and Naveen Kumar Gondhi

Reconfigurable Circular Microstrip Patch Antenna with Polarization Diversity .......................................................... 383
Prachi P. Vast and S.D. Apte

Issues with DCR and NLSR in Named-Based Routing Protocol .......................... 391
Rajeev Goyal and Samta Jain Goyal

Design and Analysis of Quantum Dot Cellular Automata Technology Based Reversible Multifunction Block ........................................ 399
Waje Manisha Govindrao and K. Pravin Dakhole

Text-Independent Automatic Accent Identification System for Kannada Language .......................................................... 411
R. Soorajkumar, G.N. Girish, Pravin B. Ramteke, Shreyas S. Joshi and Shashidhar G. Koolagudi

A Study on the Effect of Adaptive Boosting on Performance of Classifiers for Human Activity Recognition .......................... 419
Kishor H. Walse, Rajiv V. Dharaskar and Vilas M. Thakare

Toward Improved Performance of Emotion Detection: Multimodal Approach .......................................................... 431
R.V. Darekar and A.P. Dhande

Priority Dissection Supervision for Intrusion Detection in Wireless Sensor Networks .......................................................... 445
Ayushi Gupta, Ayushi Gupta, Deepali Virmani and Payal Pahwa

Multi-objective Evolution-Based Scheduling of Computational Intensive Applications in Grid Environment ........................................ 457
Mandeep Kaur

Vinod B. Durdi, Prahlad T. Kulkarni and K.L. Sudha

Mining Frequent Quality Factors of Software System Using Apriori Algorithm .......................................................... 481
Jyoti Agarwal, Sanjay Kumar Dubey and Rajdev Tiwari
Algorithm for the Enumeration and Identification of Kinematic Chains ..................................................... 491
Suwarna Torgal

A New Congestion Avoidance and Mitigation Mechanism Based on Traffic Assignment Factor and Transit Routing in MANET ............................................................... 501
Jay Prakash, Rakesh Kumar and J.P. Saini

MRWDPP: Multipath Routing Wormhole Detection and Prevention Protocol in Mobile Ad Hoc Networks ........ 513
Ravinder Ahuja, Vinit Saini and Alisha Banga

Self-coordinating Bus Route System to Avoid Bus Bunching ................................. 523
Vishal B. Pattanashetty, Nalini C. Iyer, Abhinandan Dinkar and Supreeta Gudi

Review on Data Hiding in Motion Vectors and in Intra-Prediction Modes for Video Compression .......................... 533
K. Sridhar, Syed Abdul Sattar and M. Chandra Mohan

Generation of Product Cipher for Secure Encryption and Decryption Based on Vedic Encryption Ideology and Using Variable and Multiple Keys ........................................... 541
Vaishnavi Kamat

A Novel Integer Representation-Based Approach for Classification of Text Documents .................................. 557
S.N. Bharath Bhushan, Ajit Danti and Steven Lawrence Fernandes

Communication Device for Differently Abled People: A Prototype Model .................................................... 565
Rajat Sharma, Vikrant Bhateja, S.C. Satapathy and Swarnima Gupta

Combination of PCA and Contourlets for Multispectral Image Fusion .......................................................... 577
Anuja Srivastava, Vikrant Bhateja and Aisha Moin

A Behavioral Study of Some Widely Employed Partitional and Model-Based Clustering Algorithms and Their Hybridizations ........ 587
D. Raja Kishor and N.B. Venkateswarlu

An Adaptive MapReduce Scheduler for Scalable Heterogeneous Systems .................................................. 603
Mohammad Ghoneem and Lalit Kulkarni

Enhancement in Connectivity by Distributed Beamforming in WSN ............................................................ 613
Vandana Raj and Kulvinder Singh
Sparse Representation Based Query Classification Using LDA Topic Modeling .......................................................... 621
Indrani Bhattacharya and Jaya Sil

Multiple Home Automation on Raspberry Pi ...................... 631
Krishna Chaitanya, G. Karudaiyar, C. Deepak and Sainath Bhumi Reddy

Sentiment Analysis Based on A.I. Over Big Data .................. 641
Saroj Kumar, Ankit Kumar Singh, Priya Singh, Abdul Mutalib Khan, Vibhor Agrawal and Mohd Saif Wajid

Negotiation and Monitoring of Service Level Agreements in Cloud Computing Services ............................. 651
S. Anithakumari and K. Chandrasekaran

Impact of Performance Management Process on Print Organizational Performance—In Indian Context .................. 661
P. Iyswarya and S. Rajaram

Mobility Aware Path Discovery for Efficient Routing in Wireless Multimedia Sensor Network ........................................ 673
Rachana Borawake-Satao and Rajesh Prasad

Emerging Internet of Things in Revolutionizing Healthcare .......... 683
Poonam Bhagade, Shailaja Kanawade and Mangesh Nikose

Swarm Intelligent WSN for Smart City ................................ 691
Shobha S. Nikam and Pradeep B. Mane

Representing Natural Language Sentences in RDF Graphs to Derive Knowledge Patterns ........................................ 701
S. Murugesh and A. Jaya

A Framework to Enhance Security for OTP SMS in E-Banking Environment Using Cryptography and Text Steganography .......... 709
Ananthi Sheshasaayee and D. Sumathy

Study on the Use of Geographic Information Systems (GIS) for Effective Transport Planning for Transport for London (TfL) .... 719
M.S. Mokashi, Perdita Okeke and Uma Mohan

An Integration of Big Data and Cloud Computing .................. 729
Chintureena Thingom and Guydeuk Yeon

A New Approach for Rapid Dispatch to Remote Cooperative Groups with a Novel Key Archetype Using Voice Authentication .......... 739
T.A. Amith, J. Prathima Mabel, Rekha Jayaram and S.M. Bindu Bhargavi
# Contents

ICT Enabled Proposed Solutions for Soil Fertility Management in Indian Agriculture .......................... 749
B.G. Premasudha and H.U. Leena

Software Maintenance: From the Perspective of Effort and Cost Requirement ................................. 759
Sharon Christa, V. Madhusudhan, V. Suma and Jawahar J. Rao

FPGA Implementation of Low Power Pipelined 32-Bit RISC Processor Using Clock Gating .................. 769
R. Shashidar, R. Santhosh Kumar, A.M. MahalingaSwamy and M. Roopa

Dynamic Software Aging Detection-Based Fault Tolerant Software Rejuvenation Model for Virtualized Environment .......... 779
I.M. Umesh and G.N. Srinivasan

Analysis of Group Performance by Swarm Agents in SACA Architecture ........................................... 789
K. Ashwini and M.V. Vijayakumar

Background Modeling and Foreground Object Detection for Indoor Video Sequence .............................. 799
N. Satish Kumar and G. Shobha

Agri-Guide: An Integrated Approach for Plant Disease Precaution, Detection, and Treatment .................. 809
Anjali Chandavale, Suraj Patil and Ashok Sapkal

Determination of Area Change in Water Bodies and Vegetation for Geological Applications by Using Temporal Satellite Images of IRS 1C/1D ............................................................. 819
Mansi Ekbote, Ketan Raut and Yogesh Dandawate

Significance of Independent Component Analysis (ICA) for Epileptic Seizure Detection Using EEG Signals ................. 829
Varsha K. Harpale and Vinayak K. Bairagi

Author Index .................................................. 839