

3.3 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during year

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Srujan K. Raju, Vinayak G. Jagtap and Parag A. Kulkarni	Artificial Intelligence Enabled Smart Cities for Premises Security	Artificial Intelligence Enabled Smart Cities for Premises Security	Artificial Intelligence for Smart Cities and Villages: Advanced Technologies, Development, and Challenges	AISCV_2021	International	2021	978-981-5049-25-1	CMR Technical Campus, Hyderabad	Bentham Science
2	G. Somasekhar, Raj Kumar Patra & K. Srujan Raju	The Research Importance and Possible Problem Domains for NoSQL Databases in Big Data Analysis	The Research Importance and Possible Problem Domains for NoSQL Databases in Big Data Analysis	Proceedings of the 2nd International Conference on Computational and Bio Engineering	2nd International Conference on Computational and Bio Engineering	International	2021	978-981-16-1941-0	CMR Technical Campus, Hyderabad	Springer
3	Giddaluru Somasekhar, Kotagiri Srujanraju, Manjaiah D. Huchaiiah and Nuthanakanti	Artificial Intelligence: A New Hope in Agriculture	Artificial Intelligence: A New Hope in Agriculture	Artificial Intelligence for Smart Cities and Villages: Advanced Technologies, Development, and Challenges	AISCV_2021	International	2021	978-981-5049-25-1	CMR Technical Campus, Hyderabad	Bentham Science
4	Pravinkumar B. Landge, Dhiraj V. Bhise, Kapil Kumar Nagwanshi, Raj Kumar Patra & Santosh R. Durugkar	A Selection-Based Framework for Building and Validating Regression Model for COVID-19 Information Management	A Selection-Based Framework for Building and Validating Regression Model for COVID-19 Information Management	Proceedings of 5th International Conference on Smart Computing and Informatics (SCI 2021), Springer Smart Innovation, Systems and Technologies	5th International Conference on Smart Computing and Informatics (SCI 2021), Springer Smart Innovation, Systems and Technologies	International	2022	978-981-16-9669-5	CMR Technical Campus, Hyderabad	Springer

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5	Gupta, A., Mahule, R., Patra, R.K., <i>Sasibhushana Rao</i>	Fingerprint Liveness Detection to	Fingerprint Liveness Detection to	Proceedings of 5th International Conference on	5th International Conference on Smart Computing and Informatics	International		2022	978-981-16-9669-6	CMR Technical Campus, Hyderabad	Springer
6	Dr. T S Mastan Rao	Machine Learning for the Assessment of Transient Stability of Power Systems	Machine Learning for the Assessment of Transient Stability of Power Systems	IEEE 6th International Conference on Intelligent Computing and Control Systems (ICICCS)	IEEE 6th International Conference on Intelligent Computing and Control Systems (ICICCS)	International		2022		CMR Technical Campus, Hyderabad	
7	Satish Kumar Pannala, Venubabu Rachapudi, S Anjali Devi, Sasibhushana Rao Pappu & T. Subha Mastan Rao	Hybridization of Modified Cuckoo-Moth Flame Optimization for Effective Route Recovery of Networks	Hybridization of Modified Cuckoo-Moth Flame Optimization for Effective Route Recovery of Networks	Lecture Notes in Electrical Engineering	Lecture Notes in Electrical Engineering	International		2022	1876-1100	CMR Technical Campus, Hyderabad	Springer
8	Dr. G. Somasekhar, Dr. K. SrujanRaju	Framework for Diabetic Retinopathy Classification	Framework for Diabetic Retinopathy Classification	Smart Intelligent Computing and Applications, Springer SIST	Smart Intelligent Computing and Applications, Springer SIST	International		2022	978-981-16-9704-3	CMR Technical Campus, Hyderabad	Springer
9	N. Bhaskar	A Dynamic Model and Algorithm for	A Dynamic Model and Algorithm for	5th International Conference on	5th International Conference on	International		2022	978-981-16-9669-5	CMR Technical	Springer
10	N. Bhaskar	Pulmonary Nodule Detection Using Laplacian of Gaussian and Deep Convolutional Neural Network	Pulmonary Nodule Detection Using Laplacian of Gaussian and Deep Convolutional Neural Network	5th International Conference on Smart Computing and Informatics (SCI 2021), Springer Smart Innovation, Systems and Technologies	5th International Conference on Smart Computing and Informatics (SCI 2021), Springer Smart Innovation, Systems and Technologies	International		2022	978-981-16-9669-5	CMR Technical Campus, Hyderabad	Springer

11	V. Naresh	A Nanoplasmonic Ultra-wideband Antenna for Wireless Communications	A Nanoplasmonic Ultra-wideband Antenna for Wireless Communications	Lecture Notes in Electrical Engineering	Lecture Notes in Electrical Engineering	International	2022	978-981-16-8554-5	CMR Technical Campus, Hyderabad	Springer
12	V. Naresh	A Secure and Optimal Path Hybrid Anti-Based Routing Protocol with Hope Count Minimization for Wireless Sensor Networks	A Secure and Optimal Path Hybrid Anti-Based Routing Protocol with Hope Count Minimization for Wireless Sensor Networks	Lecture Notes in Electrical Engineering	Lecture Notes in Electrical Engineering	International	2022	978-981-16-8554-5	CMR Technical Campus, Hyderabad	Springer
13	A. Uday Kiran	Intelligent and Adaptive Learning Management System Technology (LMST) Using Data Mining and Artificial Intelligence	Intelligent and Adaptive Learning Management System Technology (LMST) Using Data Mining and Artificial Intelligence	Lecture Notes in Electrical Engineering	Lecture Notes in Electrical Engineering	International	2022	978-981-16-7985-8	CMR Technical Campus, Hyderabad	Springer
14	Dr. BagamLaxmaiah	Intelligent and Adaptive Learning Management System Technology (LMST) Using Data Mining and Artificial Intelligence	Intelligent and Adaptive Learning Management System Technology (LMST) Using Data Mining and Artificial Intelligence	Lecture Notes in Electrical Engineering	Lecture Notes in Electrical Engineering	International	2022	978-981-16-7985-8	CMR Technical Campus, Hyderabad	Springer


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15	BanothuRamji	Intelligent and Adaptive Learning Management System Technology (LMST) Using Data Mining and Artificial Intelligence	Intelligent and Adaptive Learning Management System Technology (LMST) Using Data Mining and Artificial Intelligence	Lecture Notes in Electrical Engineering	Lecture Notes in Electrical Engineering	International		2022	978-981-16-7985-8	CMR Technical Campus, Hyderabad	Springer
16	Dr.AshutoshSaxena	Botnet Classification with Deep Learning Models	Botnet Attack Classification with Deep Learning Models	Smart Innovation, Systems and Technologies https://doi.org/10.1007/978-981-16-9705-0_55	Smart Innovation, Systems and Technologies https://doi.org/10.1007/978-981-16-9705-0_55	International		2022	978-981-16-9705-0	CMR Technical Campus, Hyderabad	Springer
17	Dr.AshutoshSaxena	Phishing URL Identification Using Machine Learning, Ensemble Learning and Deep Learning Techniques	Phishing URL Identification Using Machine Learning, Ensemble Learning and Deep Learning Techniques	Smart Innovation, Systems and Technologies https://doi.org/10.1007/978-981-16-9705-0_56	Smart Innovation, Systems and Technologies https://doi.org/10.1007/978-981-16-9705-0_56	International		2022	978-981-16-9705-0	CMR Technical Campus, Hyderabad	Springer
18	Dr.AshutoshSaxena	Fault Analysis Against Round of L-Block	Fault Analysis Against Round of L-Block	Smart Innovation, Systems and Technologies https://doi.org/10.1007/978-981-16-9705-0_57	Smart Innovation, Systems and Technologies https://doi.org/10.1007/978-981-16-9705-0_57	International		2022	978-981-16-9705-0	CMR Technical Campus, Hyderabad	Springer

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19	Ajeet Singh, Vikas Tiwari, Allu Swamy Naidu, Appala Naidu Tentu, K. Surjan Raju & Ashutosh Saxena	Analysis of Password Protected Documents Using Statistical Approaches on High Performance Computing	Analysis of Password Protected Documents Using Statistical Approaches on High Performance Computing	Lecture Notes in E	Lecture Notes in E	International	2022	1876-1100	CMR Technical Campus, Hyderabad	Springer
20	Suwarra Gothane, K. Srujan Raju & B. Kaviha Rani	Waste Management Data Analytics and Solution for Domestic Waste Management to Improve Soil Quality	Waste Management Data Analytics and Solution for Domestic Waste Management to Improve Soil Quality	Lecture Notes in E	Lecture Notes in E	International	2022	1876-1100	CMR Technical Campus, Hyderabad	Springer
21	Shraban Kumar Apat, Jyotimaya Mishra, K. Srujan Raju & Neelamadhab Padhy	A Study on Smart Agriculture Using Various Sensors and Agrobot: A Case Study	A Study on Smart Agriculture Using Various Sensors and Agrobot: A Case Study	Lecture Notes in E	Lecture Notes in E	International	2022	2190-3018	CMR Technical Campus, Hyderabad	Springer
22	M. Varaprasad Rao, A. V. Krishna Prasad, A. Anusha & K. Srujan Raju	Telugu Text Summarization Using HS and GA Particle Swarm Optimization Algorithms	Telugu Text Summarization Using HS and GA Particle Swarm Optimization Algorithms	Smart Innovation	Smart Innovation,	International	2022	2190-3018	CMR Technical Campus, Hyderabad	Springer
23	K. Nirmala, K. Saruladha & K. Srujan Raju	Intelligent Noise Detection and Correction with Kriging on Fundus Images of Diabetic Retinopathy	Intelligent Noise Detection and Correction with Kriging on Fundus Images of Diabetic Retinopathy	Lecture Notes in E	Lecture Notes in E	International	2022	1876-1100	CMR Technical Campus, Hyderabad	Springer

24	Dr.K.Mohana Lakshmi	Machine Learning Approaches and Applications in Applied Intelligence for Healthcare Data Analytics	Big Data-Based Frameworks and Machine Learning		Book Chapter	International	2022	978100-3132110	CMR Technical Campus	taylor francis, CRC Press
25	Dr.K.Mohana Lakshmi	Performance Measurement of Reed-Solomon Code through AWGN Channel Under Various Modulation Schemes	Performance Measurement of Reed-Solomon Code through AWGN Channel Under Various Modulation Schemes	International Conference on Mobile Networks and Wireless Communications (ICMNNWC-2021)	International Conference on Mobile Networks and Wireless Communications (ICMNNWC-2021)	International	2021		CMR Technical Campus	IEEE
26	Dr Mahesh V Soni	AIP	Design and analysis of two dimensional electromagnetic band gap antenna for WIFI applications	AIP Conference Proceedings	ICMMSE 2020	International	2021	978-0-7354-4114-9	CMR Technical Campus	AIP
27	Dr Mahesh V Soni	A Collection of Contemporary Research Articles in Electronics, Communication and Computation	IMT Estimation through Points of Interest based on Surf and MSER Descriptors	A Collection of Contemporary Research Articles in Electronics, Communication and Computation	NCECC-2020	National	2021	978-81-948050-7-6	CMR Technical Campus	MANTECH
28	SK.Dilshad	SPRINGER LNEE	Analytical Variable execution of Vedic Multiplier using FinFET GDI Full Adder			International	2021		CMR Technical Campus	
29	Dr.M.Kishore Kumar	Techniques of data mining		International Conference on ICMEET 2021		International	2022	https://link.springer.com/10.1007/978-93-94339-26-2	CMR	IEEE AGPH books

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30	Dr. Shankar Nayak Bhukya	Basics of Computer Networking			International	2022	ISBN: 9789356254305	CMRTC	SIPH
31	Rumpa Sutradhar	Utilization of Human hair fibre to stabilize Black Cotton Soil and Contaminated Soil	IOP Conference Series: Earth and Environmental Science	Innovative and Sustainable Technologies in Civil Engineering (ISTCE-2021)	International	2022	1755-1315	CMR Technical Campus	IOP Conference Series
32	Dr. Ch. Srinivas Rao	Influence of bentonite as partial replacement of cement in basalt fiber concrete	IOP Conference Series: Materials Science and Engineering		International	2021	1757-899X	CMR Technical Campus	IOP Conference Series
33	Dr. Ch. Srinivas Rao	Performance of high strength concrete consisting of alccofine and metakaolin as a partial replacement of cement and copper slag as fine aggregate	IOP Conference Series: Materials Science and Engineering		International	2021	1757-899X	CMR Technical Campus	IOP Conference Series
34	Dr. S. Vijaya Bhaskar Reddy	Experimental Investigation on Ternary Concrete Containing of Granulated Blast furnace slag as a partial replacement to Fine aggregate.	IOP Conference Series: Materials Science and Engineering		International	2021	1757-899X	CMR Technical Campus	IOP Conference Series

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35	Dr. S. Vijaya Bhaskar Reddy		Performance of Binary Steel Fibre Concrete Consisting of Copper Slag as Partial Replacement to Fine aggregate	IOP Conference Series: Materials Science and Engineering	International	2021	1757-899X	CMR Technical Campus	IOP Conference Series
36	A. Nagaraju		An Experimental study on Self-compacting concrete by packing Density Method	IOP Conference Series: Materials Science and Engineering	International	2021	1757-899X	CMR Technical Campus	IOP Conference Series
37	Rumpa Sutradhar		Study on Properties of Geopolymer Concrete using Hybrid Fibres	IOP Conference Series: Earth and Environmental Science	International	2022	1755-1315	CMR Technical Campus	IOP Conference Series
38	A.Nagaraju		An Experimental Study on Ternary Blended Fibre Reinforced concrete with Basalt Fibre and Steel Fibre	IOP Conference Series: Earth and Environmental Science	International	2022	1755-1315	CMR Technical Campus	IOP Conference Series
39	Raj Kumar Patra,A. Mahendar & G. Madhukar		Data Mining and Machine learning Applications	Inductive Learning Including Decision Tree and Rule Induction Learning	International	2021	9781119791782	CMR Technical Campus	Scrivener Publishing
40	Raj Kumar Patra,Srinivas Konda,M. Varaprasad Rao,Kavitarani Balmuri & G. Madhukar		Cognitive Behaviour and Human Computer Interaction Based on Machine Learning Algorithms	Predictive Model and Theory of Interaction	International	2021	9781119791607	CMR Technical Campus	Scrivener Publishing

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41	Patra, R.K., Rao, M.V., Balmuri, K., Konda, S., Chande, M.K.	Green Computing and its Applications	High Performance Computing and Fault Tolerance Technique Implementation in Cloud Computing		International	2021	978-1-68507-357-2	CMR Technical Campus	Nova Science Publishers	
42	G. Prakash, M. Ganeshan, A. Shenbagavali, M. Satheesh Kumar, K. Srujan Raju & K. Suthendran		A Proactive Threat Hunting Model to Detect Concealed Anomaly in the Network	Smart Intelligent Computing and Applications, Springer SIST	Smart Intelligent Computing and Applications, Springer SIST	International	2022	978-981-16-9704-3	CMR Technical Campus	Springer
43	Telagarapu Prabhakar. K. Srujan Raju & K. Reddy Madhavi		Support Vector Machine Classification of Remote Sensing Images with the Wavelet-based Statistical Features	Smart Intelligent Computing and Applications, Springer SIST	Smart Intelligent Computing and Applications, Springer SIST	International	2022	978-981-16-9704-3	CMR Technical Campus	Springer
44	D.Sravani		Experimental assessment of axial deformation behaviour of aluminium-kevlar composite hybrid bitubular structures	Materials Today : Proceedings			Oct-21		CMR Technical Campus	Elsevier
45	D.Sravani		Progressive collapse behaviour of aluminium-composite bitubular energy absorbers subjected to axial loading	ALP Conference Proceedings			Jul-21		CMR Technical Campus	

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46	Leena Vinolia		UV Light Induced Photocatalytic Activity of Zinc Doped Gadolinium Oxide Nanoparticles:Enhanced Photodegradation of Rhodamine B dye	ICAMSEE 2020	International Virtual Conference of Advanced Material for Sustainable Energy and Environment		2022		CMR Technical Campus	
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Chapter Full-text available

Artificial Intelligence Enabled Smart Cities for Premises Security

Aug 2022

DOI: [10.2174/9789815049251122010011](https://doi.org/10.2174/9789815049251122010011)

In book: Artificial Intelligence for Smart Cities and Villages: Advanced Technologies, Development, and Challenges

Srujan kotagiri Raju · Vinayak Jagtap · Parag A. Kulkarni

Research Interest Score	0.7
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Abstract and figures

Smart cities and villages have enhanced the quality of lives of residents. Various computer-assisted technologies have been harnessed for the development of smart cities and villages in order to provide solutions for common and niche urban problems. The development of smart environments has been possible due to advances in computing power and artificial intelligence (AI) that have allowed the deployment of scalable technologies. Artificial Intelligence for Smart Cities and Villages: Advanced Technologies, Development, and Challenges summarizes the role of AI in planning and designing smart solutions for urban and rural environments. This book is divided into three sections to impart a better understanding of the topics to readers. These sections are: 1) Demystifying smart cities and villages: A traditional perspective, 2) Smart innovations for rural lifestyle management solutions, and 3) Case studies. Through this book, readers will be able to understand various advanced technologies that are vital to the development of smart cities and villages. The book presents 15 chapters that present effective solutions to urban and rural challenges. Concepts highlighted in chapters include smart farms, indoor object classification systems, smart transportation, blockchains for medical information, humanoid robots for rural education, IoT devices for farming, and much more. This book is intended for undergraduate and graduate engineering students across all disciplines, security providers in the IT and related fields, and trainees working for infrastructure management companies. Researchers and consultants at all levels

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Proceedings of the 2nd International Conference on Computational and Bio Engineering, pp 433–439

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The Research Importance and Possible Problem Domains for NoSQL Databases in Big Data Analysis

[G. Somasekhar](#) , [Raj Kumar Patra](#) & [K. Srujan Raju](#)

Conference paper | [First Online: 28 September 2021](#)

342 Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 215)

Abstract

The days are gone where we depend on traditional database techniques to solve the contemporary database problems. With the evolution of unstructured and semi-structured data forms and due to the frequent gathering of voluminous data from time to time, new techniques to store, process and manage data are becoming most crucial nowadays. NoSQL forms are emerging as the basic source for researchers to invent new database techniques, which can be applied in addition to the conventional techniques in order to solve the existing

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Chapter Full-text available

Artificial Intelligence: A New Hope in Agriculture

Aug 2022

In book: Artificial Intelligence for Smart Cities and Villages: Advanced Technologies, Development, and Challenges · Publisher: Bentham Science Publisher

 Srujan kotagiri Raju

Research Interest Score	1.4
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Abstract

Conventional agriculture strategies do not suffice to serve the food demand for the growing population nowadays. Scientists carried out many investigations for effective agricultural outputs over the last few decades. The newly emerging technologies such as Artificial Intelligence (AI), deep learning, machine learning, Internet of Things (IoT), cloud computing, cognitive computing and so on are motivating the agriculture scientists to invent novel methods in farming. Researchers performed Crop wise specific studies for the benefit of the farmers, which use different technological devices like sensors, cameras, drones, etc. Automation of agricultural equipment has become crucial to provide instant results to help the farmers in decisionmaking wherever required. The article thoroughly explains the impact of automation and AI in the field of agriculture today. It also highlights the usage of prominent AI techniques nowadays and possible research directions to make use of AI to assist the farmers.

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Smart Intelligent Computing and Applications, Volume 1 pp 611–622

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A Selection-Based Framework for Building and Validating Regression Model for COVID-19 Information Management

[Pravinkumar B. Landge](#), [Dhiraj V. Bhise](#), [Kapil Kumar Nagwanshi](#)

[✉](#), [Raj Kumar Patra](#) & [Santosh R. Durugkar](#)

Conference paper | [First Online: 19 April 2022](#)

193 Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 282)

Abstract

The world is facing pandemic situation, i.e., COVID-19, all the researchers and scientist are working hard to overcome this situation. Being human it is everyone's duty to take care of family and the society. In this case study, an attempt has been made to find the relation between various variables by dividing them into the independent and dependent variables. A dataset is selected for analysis purpose which consists of variables like location (countries across the globe, date, new cases, new deaths, total deaths, smoking habits washing habits,

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Chapter

Fingerprint Liveliness Detection to Mitigate Spoofing Attacks Using Generative Networks in Biometric System

Apr 2022

DOI: [10.1007/978-981-16-9669-5_57](https://doi.org/10.1007/978-981-16-9669-5_57)

In book: Smart Intelligent Computing and Applications, Volume 1

Akanksha Gupta · Rajesh Mahule · Raj Kumar Patra · [Show all 5 authors](#) · Mozammil Akhtar

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Abstract

Today fingerprint detection system is being used widely, from a corporate office to military camps. They are secure, have speed and accurate, but they are vulnerable to spoof attacks. And the primary aim of the fingerprint reader is to provide definitive and exact user authentication but also to be secure and ensure user confidence. The most prominent vulnerability in fingerprint spoof detection system was poor generalization of spoof classes that means whenever an unknown spoof the material was given to the detection system the error rate increases up to 3 folds. To improve the accuracy and performance of the fingerprint detection systems when fabricated to an unknown number of spoof materials thus decreasing the cross-performance error rate. Hence improving the poor generalizing problem of a fingerprint spoof detector using generative and other convolution networks. We are using one-class classification and minutiae extraction approaches using DCGANs and MobileNets, respectively, and using these networks gives a spoof score to given fingerprint and found out that our results had an accuracy of 5–10% more than the previous binary spoof classifiers. Keywords Fingerprint detection (live and bonafide) DCGANs CNN One-class classifier

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Smart Intelligent Computing and Applications, Volume 2 pp 567–572

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Botnet Attack Classification with Deep Learning Models

[K. V. Pradeepthi](#)  & [Ashutosh Saxena](#)

Conference paper | [First Online: 22 May 2022](#)

295 Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 283)

Abstract

Most devices, ranging from big data servers to the IoT in household device, are accessible on the Internet. Their functioning almost partly or wholly depends on the Internet connectivity. These innumerable devices on the Internet are opportunity for the attackers, to compromise any device and use it for their own benefit. Botnets attack detection and identification is an important security concern. In this paper, we apply various deep learning algorithms to UNBS-NB 15 dataset for the classification of botnet traffic. From our analysis, we understand that deep learning algorithms with their intricate structure are able to perform better than the machine learning

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Smart Intelligent Computing and Applications, Volume 2 pp 573–582

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Phishing URL Identification Using Machine Learning, Ensemble Learning and Deep Learning Techniques

[K. Laxmi Prasanna](#), [K. V. Pradeepthi](#) & [Ashutosh Saxena](#)

Conference paper | [First Online: 22 May 2022](#)

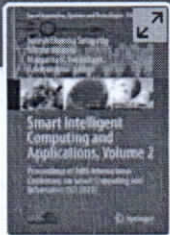
289 Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 283)

Abstract

Demand for online applications and services is increasing day by day, whereas the security lapses in them is also becoming prominent. One of the major online threats, phishing, is consistently used to dupe users for retrieving sensitive information like bank account credentials, passwords, etc. Though so many techniques are getting introduced every day to detect phishing URLs, these attacks still persist. Hence, we conducted a survey to understand about the existing phishing detection techniques and their efficiency. Our study concluded that among the algorithms used in literature, random forest

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Smart Intelligent Computing and Applications, Volume 2 pp 583–591

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Fault Analysis Against Final Round of L-Block

Swapnil Sutar , Vikas Tiwari, Ajeet Singh & Ashutosh Saxena

Conference paper | [First Online: 22 May 2022](#)

287 Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 283)

Abstract

A lightweight block cipher L-Block was presented in ACNS 2011 with various security analysis for hardware-constrained environment. Parameter such as clock cycle, throughput and gate equivalent (GE) were investigated to prove the cipher strength. This paper provides the ineffective fault analysis (IFA) and differential fault analysis (DFA) on L-Block. A byte-wise random fault injection and stuck-at-0/1 models efficiently retrieved the unknown key in Feistel function. Byte-wise fault model requires four faulty ciphertexts which reduce key search space from 2^{32} to 2^8 . Ineffective stuck-at-fault model extracted round key in 32 attempts on software-

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Smart Intelligent Computing and Applications, Volume 2 pp 553–565

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A Proactive Threat Hunting Model to Detect Concealed Anomaly in the Network

[G. Prakash](#), [M. Ganeshan](#), [A. Shenbagavalli](#), [M. Satheesh Kumar](#),
[K. Srujan Raju](#) & [K. Suthendran](#)

Conference paper | [First Online: 22 May 2022](#)

381 Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 283)

Abstract

Cyber threat hunting plays a leading role in the cyber security activity. Attackers rapidly change their attacks to steer clear of detection. This threat hunting mechanism is used when the current security mechanism is unable to prevent new attacks. Most of the existing companies do not have enough knowledge about cyber security threat hunting and do have less automating facilities of threat hunting. This paper covers proactive threat hunting model to detect anomaly in the network. This can be done with the help of digital footprints. Each department in an organization has its own digital footprints;



Smart Intelligent Computing and Applications, Volume 2 pp 603–613

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Support Vector Machine Classification of Remote Sensing Images with the Wavelet-based Statistical Features

[Telagarapu Prabhakar](#), [K. Srujan Raju](#)  & [K. Reddy Madhavi](#)

Conference paper | [First Online: 22 May 2022](#)

283 Accesses | **6** Citations

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 283)

Abstract

Image categorization is the process of assigning land cover classes to pixels. It may categorize images into forest, urban, agricultural, and other categories. The approaches in this study are tested using a large image dataset comprising 21 land use categories. There are comparisons to be done in addition to traditional approaches. DWT at two degrees of decomposition is used to extract texture features from remote sensing images. The results are explained using the UC Merced dataset. At the approximation sub-band, 72 features are extracted at the second level of decomposition using

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Inductive Learning Including Decision Tree and Rule Induction Learning

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Abstract

Inductive learning empowers the framework to perceive examples and consistencies in past Data or preparing Data and concentrate complete expectations from them. Two basic classifications of inductive learning methods, what's more, tactics, are introduced. Gap and-Conquer calculations are often referred to as Option Tree calculations and Separate-and-Conquer calculations. This chapter first efficiently portrays the concept of option trees, followed by an analysis of prominent current tree calculations like ID3, C4.5, and CART calculations. A prominent example is the Rule Extraction System (RULES) group. A modern review of RULES calculations, and Rule Extractor-1 calculation, their strength just as lack are clarified and examined. At last, scarcely any application spaces of inductive learning are introduced.

A large portion of the current learning frameworks chips away at Data that are put away in inadequately organized records. This methodology keeps them from managing Data from the genuine world, which is frequently heterogeneous and gigantic and which requires data set administration instruments. In this article, we propose a unique answer for Data mining which incorporates a Fuzzy learning device that develops Fuzzy choice trees with a multidimensional database administration framework.

Keywords: Data mining, rules induction, RULES family, inductive learning, decision tree calculations

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Predictive Model and Theory of Interaction

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Abstract

The fuse of essential ability structures into instructive frameworks helps recognize how ideas should be introduced to understudies to enhance understudy accomplishment. Numerous abilities have a causal relationship in which one aptitude should be introduced before another, demonstrating a solid expertise relationship. Realizing this relationship can assist with anticipating understudy execution and distinguish essential curves. Ability interactions, be that as it may, are not straightforwardly quantifiable; all things considered, the relationship can be assessed by noticing contrasts of understudy execution across aptitudes. Notwithstanding, such assessment techniques appear to do not have a benchmark model for thinking about their adequacy. On the off chance, two strategies for assessing a relationship's presence yield two distinct qualities: the more precise outcome? In this work, we propose a strategy for contrasting models that endeavor to measure the strength of aptitude interactions. With this technique, we start to distinguish those understudy level covariates that give the most exact models foreseeing the presence of expertise interactions.

Focusing on interactions of execution across abilities, we utilize our technique to build models to foresee the presence of five unequivocally related and five reproduced inadequately related expertise sets. Our strategy can assess a few models that recognize these distinctions with huge precision gains over an invalid model and gives the way to distinguish that interactions of understudy dominance give the main commitments to these increases in our investigation.

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Chapter 10

HIGH-PERFORMANCE COMPUTING AND FAULT TOLERANCE TECHNIQUE IMPLEMENTATION IN CLOUD COMPUTING

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ABSTRACT

Logical applications and design requires an enormous number of estimates, so we need to handle these calculations more processors,

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Chapter 56

A Selection-Based Framework for Building and Validating Regression Model for COVID-19 Information Management



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Abstract The world is facing pandemic situation, i.e., COVID-19, all the researchers and scientist are working hard to overcome this situation. Being human it is everyone's duty to take care of family and the society. In this case study, an attempt has been made to find the relation between various variables by dividing them into the independent and dependent variables. A dataset is selected for analysis purpose which consists of variables like location (countries across the globe, date, new cases, new deaths, total deaths, smoking habits washing habits, diabetic prevalence, etc. Approach is to identify the impact of independent variable on the dependent variable by applying the regression modeling. Hence, proposed case study is based on selection-based framework for validating the regression modeling for COVID-19 data analysis. Regression modeling is applied, and few representations are shown to understand the current pandemic situation across the world. In the end, using regression modeling intercept and coefficient values for different approaches (using different variables) is computed.

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Chapter 57

Fingerprint Liveliness Detection to Mitigate Spoofing Attacks Using Generative Networks in Biometric System



Akanksha Gupta, Rajesh Mahule, Raj Kumar Patra, Krishan Gopal Saraswat, and Mozammil Akhtar

Abstract Today fingerprint detection system is being used widely, from a corporate office to military camps. They are secure, have speed and accurate, but they are vulnerable to spoof attacks. And the primary aim of the fingerprint reader is to provide definitive and exact user authentication but also to be secure and ensure user confidence. The most prominent vulnerability in fingerprint spoof detection system was poor generalization of spoof classes that means whenever an unknown spoof the material was given to the detection system the error rate increases up to 3 folds. To improve the accuracy and performance of the fingerprint detection systems when fabricated to an unknown number of spoof materials thus decreasing the cross-performance error rate. Hence improving the poor generalizing problem of a fingerprint spoof detector using generative and other convolution networks. We are using one-class classification and minutiae extraction approaches using DCGANs and MobileNets, respectively, and using these networks gives a spoof score to given fingerprint and found out that our results had an accuracy of 5–10% more than the previous binary spoof classifiers.

57.1 Introduction

Today, fingerprint biometrics are taking place of traditional IDs, used in forensics, border crossing security, mobile authentication, payment transactions, ATM machines, laptops and places where user authentication is required [1]. Bolts can be stolen, safes can be broken, and passwords can also be guessed sooner or later. So how do we save the things that we value? Here then, we use biometrics say fingerprint scan,

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Human action recognition using a hybrid deep learning heuristic

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Abstract

Human action recognition in the surveillance video is currently one of the challenging research topics. Most of the works in this area are based on either building classifiers on sophisticated handcrafted features or designing deep learning-based convolutional neural networks (CNNs), which directly act on raw inputs and extract meaningful information from the video. To capture the motion information between adjacent frames, 3D CNN extracts features in temporal dimension along with spatial dimension. Even though this technique is very effective in human action recognition but limited to very few fixed frames, all human actions are not limited to a fixed number of frames; they may span several frames. If we increase the size of the input window in CNN, handling all trainable parameters in the network will be very complicated. Hence, it is advisable to encode high-level motion features from different sources to the CNN model. This paper proposed a novel framework to extract handcrafted high-level motion features and in-depth features by CNN in parallel to recognize human action. SIFT is used as handcrafted feature to encode high-level motion features from the maximum number of input video frames. The combination of deep and handcrafted features preserves more extended temporal information from entire video frames present in action video with minimal computational power. Finally, we pass the extracted SIFT into the dense layer and concatenate it with a fully connected layer of CNN for classification. We evaluate the proposed combined CNN framework against regular 3D CNN and traditional handcrafted features like optical flow with SVM, SIFT with SVM on UCF, and KTH human action dataset. We achieve better performance in terms of computational cost and processing time in the proposed CNN framework compared to the other three methods.

Keywords Human action recognition · 3D Convolutional Neural network · Deep Neural Network · Optical flow · SIFT · Motion features extraction

1 Introduction

Human action recognition in a real-world environment is highly applicable in various domains like video surveillance systems, crowd behavior analysis, human-robot interaction. However, recognizing the accurate action in real-world video is a challenging task due to many factors like variation in viewpoint, scale, cluttered background and many more (Friedrichhofer et al. 2017; Jungo et al. 2011; Le et al. 2011; Wang and Mori 2011). Few authors had taken certain assumptions on these factors while taking video and had shown comparatively better results on this problem (Jhuang et al. 2007; Ramirez and Sivic 2016). Generally, human action recognition is a two-step process. In the first step, different types of features need to be extracted from the raw video frame. Then in the second step, the classifier needs to be trained on extracted features to categorize different action classes. Feature extraction is one of the crucial parts of video and image analysis. Several types of feature

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QoS Constrained Network Coding Technique to Data Transmission Using IoT

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Abstract: The research work presents, constrained network coding technique to ensure the successful data transmission based composite channel cmos technology using dielectric properties. The charge fragmentation and charge splitting are two components of the filtered switch domino (FSD) technique. Further behavior of selected switching is achieved using generator called conditional pulse generator which is employed in Multi Dynamic Node Domino (MDND) technique. Both FSD and MDND technique need wide area compared to existing single node-keeper domino technique. The aim of this research is to minimize dissipation of power and to achieve less consumption of power. The proposed research, works by introducing the method namely Interference and throughput aware Optimized Multicast Routing Protocol (IT-OMRP). The main goal of this proposed research method is to introduce the system which can forward the data packets towards the destination securely and success-fully. To achieve the bandwidth and throughput in optimized data transmission, proposed multicast tree is selected by Particle Swarm Optimization which will select the most optimal host node as the branches of multi cast tree. Here node selection is done by considering the objectives residual energy, residual bandwidth and throughput. After node selection multi cast routing is done with the concern of interference to ensure the reliable and successful data transmission. In case of transmission range size is higher than the coverage sense range, successful routing is ensured by selecting secondary host forwarders as a backup which will act as intermediate relay forwarders. The NS2 simulator is used to evaluate research outcome from which it is proved that the proposed technique tends to have increased packet delivery ratio than the existing work.

Keywords: Multicast routing; optimal node selection; secondary relay nodes; probability of interference; residual energy; bandwidth; throughput



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Chapter 54

A Proactive Threat Hunting Model to Detect Concealed Anomaly in the Network



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Abstract Cyber threat hunting plays a leading role in the cyber security activity. Attackers rapidly change their attacks to steer clear of detection. This threat hunting mechanism is used when the current security mechanism is unable to prevent new attacks. Most of the existing companies do not have enough knowledge about cyber security threat hunting and do have less automating facilities of threat hunting. This paper covers proactive threat hunting model to detect anomaly in the network. This can be done with the help of digital footprints. Each department in an organization has its own digital footprints; whenever they are using the Internet, which is out of their footprint, the Security Operation Center (SOC) monitors that device and based on the results the threat hunters analyze the network. Once the analysis is completed, they may find the new kind of threat that is undetected on that suspicious network; then, the Security Operation Center (SOC) gets updated.

54.1 Introduction

In today's world of technological advancement, the use of the Internet is increasing and all computer-enabled businesses use the Internet for some reason. There is very little clarity about how to use the Internet safely. This sometimes creates problems with data/business loss. In this day and age, bad people are becoming more and more technologically destructive than good people, creating new types of attacks every day. Threat hunting is one of the most needed to deal effectively with these types of problems. Today, it is even harder to detect and block new attacks with

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Chapter 59

Support Vector Machine Classification of Remote Sensing Images with the Wavelet-based Statistical Features



Telagarapu Prabhakar, K. Srujan Raju, and K. Reddy Madhavi

Abstract Image categorization is the process of assigning land cover classes to pixels. It may categorize images into forest, urban, agricultural, and other categories. The approaches in this study are tested using a large image dataset comprising 21 land use categories. There are comparisons to be done in addition to traditional approaches. DWT at two degrees of decomposition is used to extract texture features from remote sensing images. The results are explained using the UC Merced dataset. At the approximation sub-band, 72 features are extracted at the second level of decomposition using DWT and other feature extraction methods. The data is classified using the supervised support vector machine (SVM) approach, and the results with the highest accuracy are determined.

59.1 Introduction

Remote sensing is a way of gathering information about various items all around the world without directly interacting with them. It is a method of gathering and analyzing non-instant geographic data to extract information about features and objects on the earth's surface, oceans, and atmosphere. Existing earth-monitoring technologies (e.g., multi/hyperspectral [1], synthetic aperture radar) generate an increasing number of various types of aerial or satellite pictures with varying resolutions (spatial resolution, spectral resolution, and temporal resolution). This demands the use of intelligent earth observation via remote sensing pictures, which enables intelligent

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Analysis of Password Protected Documents Using Statistical Approaches on High Performance Computing



Ajeet Singh, Vikas Tiwari, Allu Swamy Naidu, Appala Naidu Tentu, K. Surjan Raju, and Ashutosh Saxena

Abstract Password-based validation frameworks are as yet the most regularly utilized components for ensuring the data regardless of being helpless against dictionary reference-based attacks. Password breaking is the way towards speculating or recuperating a secret key from put away areas or from an information transmission framework. Best state-of-the-art password analysing methods like HashCat, John the Ripper and rainbow crack empower clients to check billions of passwords each second against the secret key hashes. This paper discusses various techniques including traditional, probabilistic and statistical methods for cracking the password protected files. Further, experimental evaluation, rationale and performance analysis on some sample password protected files are presented in this paper. The findings in this paper will also help understanding of both password-composition policies and metrics for quantifying password security.

Keywords Privacy · Password cracking · Dictionary attack · Brute-force attack · Personally identifiable information · Learned patterns

1 Introduction

Despite significant progress in attackers' abilities to crack passwords, text-based passwords remain the most used validation approach in computer-based systems. There are a wide range of approaches to validate clients of a framework; for example, a client can introduce a physical article like a key card, demonstrate character utilizing an individual trademark like a fingerprint or use something that solitary the client

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Waste Management Data Analytics and Solution for Domestic Waste Management to Improve Soil Quality



Suwarna Gothane, K. Srujan Raju, and B. Kavitha Rani

Abstract Solid waste management is crucial in India. In metropolitan India, nearly, 377 million population produces 62 million tons of municipal solid waste per annum, 70% is collected, 20% is treated, and 50% is neglected. With the current rate of increase in population, it will be incremental till 2025. Domestic house waste per person is also important parameter in metro cities. Exposed garbage every day results in contaminated land. Here, objective is to suggest an approach to develop an IoT-enabled waste management system to improve soil quality for agricultural activities and minimize human intervention helps to reduce human time and effort. Approach helps in control pollution and diseases caused due to environmental pollution. Here, we have performed data analytics using Weka tool and Microsoft Excel. We have used monthly-recycling-and-waste-collection-statistics data set for performing analytics and noticed contribution of curb waste maximum compare to other types of waste. There is a demand to provide technology for waste management.

Keywords Internet of things · Waste management · Data analytics

1 Introduction

Survey carried out in 2007 shows for Indian urban cities with a inhabitants more than a million estimate MSW composition by weight 41% biodegradable, 40% inert, 6% paper, 4% plastic, 4% textiles, 2% glass, 2% metals, and 1% leather. As per 2014 India Planning Commission MSW research, 51% of waste is organic, 32% is non-organic, and 17% is recyclable waste. India is called as trash bomb as 80% daily garbage remains uncovered. Thus, there is a problem of waste management. In

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Chapter 48

A Study on Smart Agriculture Using Various Sensors and Agrobot: A Case Study



Shraban Kumar Apat, Jyotirmaya Mishra, K. Srujan Raju,
and Neelamadhab Padhy

Abstract The agricultural sector is rising as a high-tech industry, attracting young workers, new enterprises, and buyers. The technology is increasingly evolving, improving farmers' processing capability, and progressing robotics and automation technology as we know it. The introduction of sensors and agrobot has sparked a new path in agricultural and farming science. Smart agriculture is an innovative theory about the technologies since different sensors provide information on agricultural fields. Most agriculture these days is fully automated with programmed autonomous robots. We addressed a seed sowing agrobot in our article. It is intended primarily to ease farmers' work. In this article, we have used the decision table and cluster approach. The main aim is to limit the work of farmers. The rudimentary power of soil seeds and soil covering is illustrated by frameworks such as the temperature, moisture, and even movement of animals, giving results in agriculture. With the IoT application, AI sensors will track the crop field and provide farmers with preventive measures to alert them of any errors via SMS. This paper has developed an IoT system to use arms, performance, and analysis to control crop development agrobot seeds.

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Chapter 54

Telugu Text Summarization Using HS and GA Particle Swarm Optimization Algorithms



M. Varaprasad Rao, A. V. Krishna Prasad, A. Anusha, and K. Srujan Raju

Abstract For the extraction of summaries of individual Telugu papers in this study, we propose using the Particle Swarm Optimization (PSO) algorithm. The PSO technique is analogous to the development of genetics and harmony search approaches (HS). The proposed technique will be examined using the Telugu NLP docs and the ROUGE tool. Experimental tests have demonstrated that the suggested approach achieves competitive and higher ROUGE values, compared with conventional HS and GA techniques.

54.1 Introduction

A description of the original text that retains the whole context [1]. Automatically a machine summary is created by the automated description. Because of the time and cost usual to understand multiple data manually, several automated text summary solutions have been built over the past decade. Automatic Text Summarization (ATS) has attracted both the academic community and the business world as a solution for sinking surpluses and assisting consumers to analyze various documents to find documents of interest [2].

ATS is critical for both academic research and business people in training and analyzing. An example of searching a phrase in the Google Search engine to display the list of results in the corresponding source. Abstract or extractive methods can be divided into approaches to ATS. A synthesis of abstract ideas seeks to establish an understanding of the key concepts used by linguistic methods in a text, and then to communicate them in phrases and plain understandable text [3][4]. An extraction

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Intelligent Noise Detection and Correction with Kriging on Fundus Images of Diabetic Retinopathy



K. Nirmala, K. Saruladha, and K. Srujan Raju

Abstract Digital imaging collections are widely used in image analysis particularly in medical and healthcare systems. Medical images collected are prone to some type of inaccuracies called noise or incompleteness. Images with inaccuracy even are important in medical image analyses as they contain image components that form rare models. To overcome the problem of inaccuracies and put through the process of crucial processes of image analyses, it is very essential to correct images as required for the models of classification. Kriging interpolation technique is implemented on medical images for the removal of speckle noise. A technique of approximation known as kriging may be used to anticipate values that have not yet been seen based on observations of the value at adjacent places. In this paper, the application of kriging interpolation depending on a distance metric between the suggested speckle noise images and non-noisy images filtered with ground truth mask is experimented. The resulting images have significant improvement in the performance of the method.

Keywords DR images · Speckle noise · Kriging interpolation

1 Introduction

Medical image analysis is a most common and essential activity in the new world of health and medical sciences with advent of many digital appliances. Deep study of anatomical structures, textures, features and comparative analyses, workflow of radiological activities, etc., needs image analyses. Furthermore classification is prime job in the medical image analysis.

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The Research Importance and Possible Problem Domains for NoSQL Databases in Big Data Analysis



G. Somasekhar, Raj Kumar Patra, and K. Srujan Raju

Abstract The days are gone where we depend on traditional database techniques to solve the contemporary database problems. With the evolution of unstructured and semi-structured data forms and due to the frequent gathering of voluminous data from time to time, new techniques to store, process and manage data are becoming most crucial nowadays. NoSQL forms are emerging as the basic source for researchers to invent new database techniques, which can be applied in addition to the conventional techniques in order to solve the existing real-time database problems today. Occasionally, NoSQL can also be termed as Not Only SQL. It is a modern approach to handle data without organizing the source data in the form of tables and sidesteps the use of SQL. In this article, the advantages and disadvantages of NoSQL forms are discussed. The possible research directions in NoSQL domain are outlined to facilitate NoSQL research from the big data perspective.

Keywords Consistency · Database · Datastore · NoSQL · Scalability · Schema

1 Introduction

The state and features of the data are varying nowadays. Most data are unstructured entailing photographs, video, text data, speech recognition or voice commands, sensor data, streaming data, medical or health records, social media blogs and so on. The traditional (RDBMS) techniques failed to fulfill the needs of the above data forms where NoSQL forms came into existence. The invention of new database

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Nanoplasmonic Multiband Band Pass Filters For THz Wireless Communications

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Abstract: This article reports the numerical analysis of nanoplasmonic multiband bandpass filter using metal-insulator-metal step impedance resonator (MIMSIR) with a dual-band impedance inverter by applying full-wave analysis, approximately at 1300 nm and 1600 nm wavelengths.

1. Introduction

Nanoplasmonic filters are very essential components in the integration of high density nanometric photonic circuits and can be used to transmit the accurate band signal and avoid the other signals [1]. Several nanoplasmonic filters have been designed, such as plasmonic bandpass filters and square ring resonators [2,3]. Almost all of these filter designs operate either in a wide band or in a single narrowband frequency range. The wideband systems are highly responsible for noise when compared with the narrowband systems. Multiband systems are crucial components to get lesser noise systems and will concurrently operate with multi functionality. Generally, a lot of single-band systems in switching mode or parallel mode operations can be connected in the design of multi-band systems. The switching mode operation can minimize the system efficiency resulting from the switching delay in between the particular bands whereas the parallel operation mode works to improve the hardware difficulties and sizes. The multiband nanoplasmonic filter has been proposed and designed using MIMSIR for simultaneous operation of two or more than two bands for multi-functional high density nanoplasmonic integrated circuits [4].

2. Geometry of the Multiband Band Pass Filter

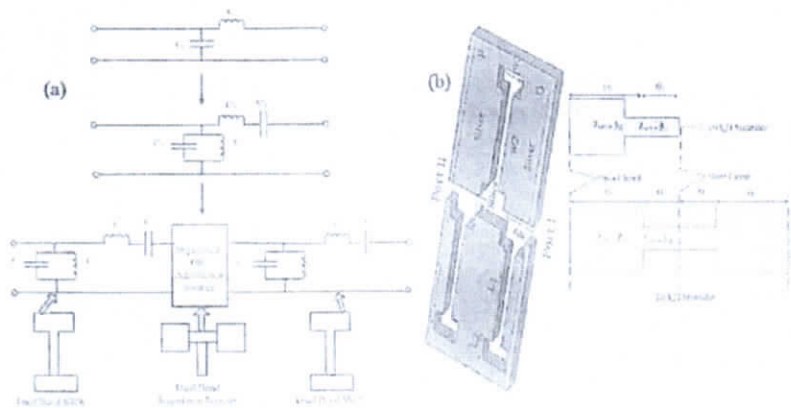


Fig. 1. (a) Synthesis of type 1 Chebyshev prototype lowpass filter (N=3). (b) Nanoplasmonic MIM waveguide-based SIR (c) $\lambda_g/4$ type SIR (d) $\lambda_g/2$ type SIR.

Fig.1 (a) demonstrates the synthesis of the prototype nanoplasmonic multiband bandpass filter. The designed nanoplasmonic multiband filter is obtained from the type 1 Chebyshev prototype low pass filter (N=3). The fundamental transverse magnetic (TM) mode of the nanoplasmonic MIM slot waveguide-based multi-band filter is excited by a plane-wave source. The results and analysis of the proposed nanoplasmonic MIMSIR filter have been carried out by applying a perfect matched layer (PML) boundary condition. The spatial grid along x and y directions is set to be $\Delta x = \Delta y = 5$ nm. The noble metal silver has been chosen as a metal and silica (SiO_2) is chosen to be an insulator with a dielectric constant $\epsilon_d = 2.50$. The dielectric constant of the metal (silver) is modeled by the well known Drude model [5]:

$$\epsilon_m = \epsilon_\infty - \frac{\omega_p^2}{\omega(\omega + j\gamma)} \quad (1)$$

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