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Genetic Basis in Stroke

Author(s): Kanika Vasudeva and ...

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Abstract

Stroke is a complex disease resulting from a combination of vascular, environmental and genetic factors. Different therapeutic treatments of stroke include antiplatelet therapy, anticoagulants, and lipid-lowering drugs. These drugs act via diverse actions and target specific enzymes. The enzymes increase the levels of ubiquitous secondary molecules that can cause changes in tone, increase platelet aggregation, cholesterol levels, and other cellular events. Several inhibitors have been developed that inhibit these enzymes and thus prevent a recurrent stroke. The most potent inhibitors given in the stroke treatment include inhibitors of the converting enzyme (ACE) (perindopril, ramipril), phosphodiesterases (PDEs) (rolipram), GpIb/IIIa and 3-hydroxy-3-methyl-glutaryl coenzyme A (HMG-CoA reductase) (pravastatin). ACE inhibitors block the ACE enzyme, thereby preventing the conversion of decapeptide angiotensin I to the active octapeptide and potent vasoconstrictor angiotensin II. Angiotensin II plays a pivotal role in the development of hypertension, atherosclerosis and thrombotic events like stroke. Other inhibitors like phosphodiesterase inhibitors prevent the inactivation of intracellular mediators of signal transduction such as cAMP and cGMP. These mediators are involved in the regulation of platelet functions. PDEIs are used as antiplatelet agents in clinical settings. Statins are given as lipid-lowering agents to reduce the risk of stroke by decreasing blood cholesterol levels through inhibition of liver enzyme β -hydroxymethyl glutaryl coenzyme A (HMG-CoA) reductase. The current chapter will focus on the recent developments in stroke treatment, especially focussing on potent inhibitors of PDE, ACE, and HMG.



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Significance of Advanced Detection Methods

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Natural Remedies for Pest, Disease Control

2020, Pages 135-142

Chapter 12 - Techniques for the Identification, and Diagnosis of Pathogens and Diseases

Ajay Kumar Gautam PHD, Shashank Kumar PhD, MSc, BSc

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<https://doi.org/10.1016/B978-0-12-819304-4.00012-9>

Abstract

This chapter describes the recent techniques used for diagnosis. Recently, more sophisticated techniques for the identification of pathogens and disease diagnosis have evolved. Techniques like immunosorbent assay, molecular methods such as polymer



Plant-Microbes-Engineered Nano-particles (PM-ENPs) Nexus in Agro-Ecosystems pp 19–27 | [Cite as](#)

Nanotechnology: Advancement for Agricultural Sustainability

[Upinder](#)  & [Rabindra Kumar](#)


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Abstract

Nanotechnology plays a vital role in agriculture for food production, security, and safety. Due to sensing, applicability of nanotechnology include the use of fertilizers to enhance food production, pesticides for pest, and disease management for monitoring soil quality and plant health. To improve the sustainability of agricultural practice, there is incorporation of nanomaterials in it as nanopesticides, nonfertilizer, and nanosensors. To suppress crop disease by requiring less input and generating less waste than conventional products, there is the use

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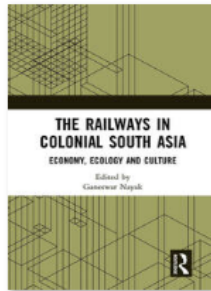
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Chapter

Colonialism and Transformation in Punjab: A Story of Railway Development

By *Bhupinder Singh*

Book [The Railways in Colonial South Asia](#)

Edition	1st Edition
First Published	2021
Imprint	Routledge
Pages	16
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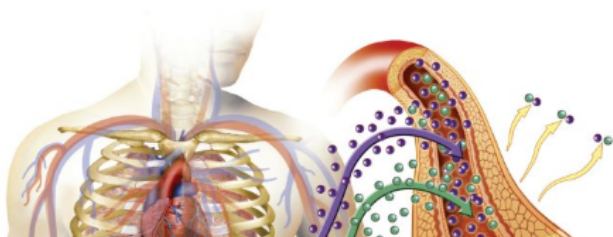
ABSTRACT

South Asia which includes present-day India, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka has been a region that attracted explorers, traders and invaders from ancient times onwards. It is recorded in the history that the invaders included the Aryans, Mongols, Mughals and Turks who used the land route to reach the rich South Asian sub-continent through the great passes of north-western areas. The uprising of 1857 was a watershed event in the history of India and brought far-reaching changes in the defence policy of

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Diabetes mellitus is one of the major causes of morbidity and mortality in the modern world. Complications of diabetes, such as diabetic retinopathy, diabetic nephropathy, diabetic neuromuscular neuropathy, diabetic ketoacidosis, diabetic foot ulcer, gestational diabetes, and technology, several new drugs have been developed for treatment of diabetes and diabetic complementary medicines have also been employed to manage diabetes and its associated complications. The management of diabetes and diabetic complications is an uphill task. Leading research groups across the world are investing billions of dollars to develop impeccable treatments for diabetic complications.

This book focuses on the understanding of recent advancements in the pathogenesis of diabetes and recent advancements in diabetic treatment. The chapters are specifically dedicated to the use of herbal medicines, alternative and complementary therapy and pers

Chapter 9. Diabetic Foot Ulcer: Pathogenies and Treatment Strategies

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(Parminder Nain, PhD and Jaspreet Kaur – Department of Pharmacy Practice, M. M. Collge of Pharmacy, Maharishi Markandeshwar (Deemed to be University) Mullana-Ambala (Haryana), India)

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(Ranjana Bhandari, Garima Khanna and Anurag Kuhad, PhD – Pharmacology Research Laboratory, University Institute of Pharmaceutical Sciences, UGC-Centre of Advanced Study, Panjab University, Chand

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Chapter 15. Novel Pharmacological Approaches for Diabetic Complications

(Anchal Arora, Uma Shanker Navik, Aiswarya Jaiswal, Prabhsharan Kaur and Puneet Kumar – Department of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, B:

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(Amit Banerjee, Tarun Chhabra, Shareen Singh, A. Rohini and Thakur Gurjeet Singh Jhajj, PhD – Chitkara College of Pharmacy, Chitkara University, Punjab, India, et al.)

Chapter 19. Drugs in Clinical Research for Management of Diabetic Complications

(Amarjot Kaur, Komal Thana, Nikhil Garg, Anjali Gupta, Thakur Gurjeet Singh and Govind Arora – Chitkara College of Pharmacy, Chitkara University, Punjab, India)

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Abstract

Document Sections

- I. Introduction
- II. Related Work
- III. Traditional Non Local Means Algorithm
- IV. Basics of Integral Image
- V. Basics Difference of Squared

Abstract:

Image denoising is one of the most important operations in computer vision. Among all the known existing denoising techniques, NLM has proved to perform much better. However, despite its effective performance, the implementation of NLM denoising is limited by a high computational complexity. Lots of Efforts have been put in to reduce this computational complexity and it has been found that summed square images (SSI) and its modified version of difference squared images (DSI) using integral image concept has been much successful in the said attempt. In this paper more contribution has been done to make the NLM faster using the same concept. However, here instead of SSI or DSI, an improved version of DSI has been introduced. The proposed version has been tested on a number of standard test images corrupted with Gaussian noise and the experimental results yielded show that besides increasing the speed, the proposed version also give better visual results than the existing methods. Further, this method has been modified in order to make it effective to remove rician noise in MRI images also. A number of numerical experiments have been conducted to support the above facts.

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Scale Invariant Fast PHT based Copy-Move Forgery Detection

Publisher: IEEE

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Abstract

Document Sections

- I. Introduction
- II. Related Work
- III. Preliminaries
- IV. Proposed Algorithm SIFPHT

Abstract:

Copy-Move forgery is a type of image forgery wherein a patch from the image is copied and pasted on the same image either to increase the occurrence of a particular object or to conceal some important detail in the image. This paper addresses the issue of copy-move forgery using the block-based method of feature extraction. In block-based methods of feature extraction, PHT is one of the competing solutions, but it is not much robust to scaling. This paper proposes Scale-Invariant Fast PHT (SIFPHT) algorithm to detect the copy-move forgery which uses Fast PHT [1] for extracting the features from the blocks. Fast PHT has a higher convergence rate than the traditional PHT, and the results prove that the speed-up of almost 4 is attained for detecting the forgery. Moreover, the Fast PHT features so obtained from the blocks are normalized before comparison due to which the scaled forged segments are also identified. Further, Fast K-Means clustering is used to estimate the similarity in the blocks and hence detect the copy-move forgery.

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 No Access • Published Online: 26 August 2020

Symmetry reductions and conservation laws of Rosenau Hyman equation with arbitrary constant coefficients

AIP Conference Proceedings **2253**, 020002 (2020); <https://doi.org/10.1063/5.0018982>

Pinki Kumari^{1,a)}, R. K. Gupta^{2,b)}, and Sachin Kumar^{1,c)}

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In this study, we consider the Rosenau Hyman (RH) equation with arbitrary constant coefficients to examine its classical as well as nonclassical symmetries. Further optimal system for Lie algebra and corresponding similarity reductions are presented. Moreover,



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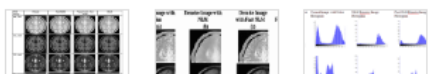
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 - 3. Proposed method
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Fuzzy based fast non local mean filter to denoise Rician noise

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Abstract

MRI images suffer from a type of multiplicative noise called Rician noise. The traditional smoothing filters are not effective to reduce this type of noise. Non local Means (NLM) filters with bias correction is a promising technique for such type of signal dependent noise. The NLM denoising is based on self-similarity and is computationally very expensive. Many researchers are working to improve its time complexity. In most cases there is a tradeoff between speed and quality of denoised image. This paper proposes a

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Clustering of Tweets: A Novel Approach to Label the Unlabelled Tweets

Author : Tabassum Gull Jan

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Abstract

Twitter is one of the fastest growing microblogging and online social networking site that enables users to send and receive messages in the form of tweets. Twitter is the trend of today for news analysis and discussions. That is why Twitter has become the main target of attackers and cybercriminals. These attackers not only hamper the security of Twitter but also destroy the whole trust people have on it. Hence, making Twitter platform impure by misusing it. Misuse can be in the form of hurtful gossips, cyberbullying, cyber harassment, spams, pornographic content, identity theft, common Web attacks like phishing and malware downloading, etc. Twitter world is growing fast and hence prone to spams. So, there is a need for spam detection on Twitter. Spam detection using supervised algorithms is wholly and solely based on the labelled dataset of Twitter. To label the datasets manually is costly, time-consuming and a challenging task. Also, these old labelled datasets are

Attempt to unravel the ‘tangled bank’: a new-normal global meeting*

The lecture workshop featured various topics on ‘Celebrate Biodiversity’ – this year’s World Environment Day. The virtual workshop was conducted using two platforms; Zoom® for speakers and moderators, which was live-streamed to the YouTube®. Participants viewed the sessions and interacted with the speakers through the YouTube live chat option. This approach enabled us to accommodate a large number of participants.

There had been 1425 registered participants in this workshop. While the vast majority were from various states of India, there were 45 international participants hailing from Germany, Canada, US, UK, Spain, Portugal, UAE, Uruguay, Chile, the Philippines, Australia and New Zealand. Workshop registration was enabled through Google forms. One of the questions that the registration form asked was ‘highest qualification’, for which 45.5% of the participants answered masters, 23.8% answered bachelors, and 22.4% answered PhD. In addition, as the talks were archived on YouTube, viewers continue to watch these talks.

We used Certify-em®, a free add-on for Google forms, for the automatic generation of participation certificates. This approach seems helpful when the number of participants are very large as in this conference, because otherwise a considerable time and effort would have been spent on the generation of certificates manually. This method works regardless of the number of participants; the only limit being 1500 certificates per day for Google G Suite users. As details of registered participants were provided at the workshop webpage, issued certificates were digitally validated (by making sure

that the name in certificate appeared on the webpage) to prevent misuse.

The title of the workshop ‘tangled bank’ was chosen as a legacy to its reference in Charles Darwin’s *The Origin of Species*. As the term was originally used by Darwin to refer to the interconnectedness of various living beings, the workshop featured several immersive interactive talks by experts across all domains of biodiversity with an emphasis on the interconnected nature of living beings. Majority of the time was spent on two-way synchronous interactions to make the sessions more immersive and real-time. Each session had 20 minutes of presentation, followed by 40 minutes of discussions where questions asked by participants were discussed. The talks featured in this workshop were the following in the order of appearance: Bacterial diversity by Deepa Agashe, Indian songbirds by Manjari Jain, Mangroves by Martin Zimmer, Frogs by K. V. Gururaja, Animal Diversity by Kailash Chandra, Snakes by Varad Giri, Himalayan Rhododendrons by Ashiho A. Mao, Wild Himalayan bamboos by Paramjit Singh, Freshwater molluscs by Aravind Madhyasta, Freshwater Diatoms by Karthick Balasubramanian, Dragonflies and damselflies by K. A. Subramanian, Endemic fishes of Western Ghats by Rajeev Raghavan, Biodiversity laws by Tarun Arora, Dogs in the Urban ecosystem by Anindita Bhadra, and Biodiversity by R. K. Kohli.

The talks and interactions featured not only technical information but also philosophy, interconnectedness, spirituality, conservation, policy, folklore, citizen science, and biodiversity-documenting apps, making it the only one of its kind. Speakers on the chosen group of organisms provided not only a thorough introduction of its biology and species commonly found in India, but also its larger ecological position and its microbiome. The wildlife microbiome itself is an emerging discipline with research on

several topics virtually nonexistent; for instance, the microbiome of bats. The microbiome of wildlife is of crucial relevance in the wake of COVID-19 as this and other emerging infectious diseases are indeed the results of spillover events – wherein normal flora of microbes residing in and on the wildlife gets introduced to the human being due to biodiversity encroachment and wildlife trade.


Despite India being wealthy in terms of biodiversity with four biodiversity hotspots, biodiversity documentation in the country is still in infancy. Additionally, documentation of the wildlife microbiome is missing. The speakers emphasized the need to foster citizen science for biodiversity documentation, which is nonexistent except for a few well-known groups, including frogs, flowering plants, butterflies, and birds. Integrating citizen science for biodiversity documentation not only helps to get things done with reduced costs but also helps to sensitize the public on a greater appreciation of biodiversity in general and the importance of its conservation in particular. The conference also highlighted the importance of integrating culture and spirituality in biodiversity conservation, with several speakers citing the example of Kerala and North-East India’s sacred groves. Speakers also highlighted the need to communicate biodiversity characterization to the public in regional languages. Knowing to identify the species not only help everyone to stay safe (for example, while foraging which fruits are safe to eat, or identifying venomous snakes) but also help us to conserve the rare species.

*A report of the lecture workshop entitled ‘tangled bank’, organized in connection with UN World Environment Day jointly by the Central University of Punjab, Bathinda, and INYAS (Indian National Young Academy of Science, New Delhi). The workshop was held on virtual mode from 31 May to 5 June 2020.

Felix Bast*, **Paramjit Singh** and **Vinay Kumar**, Department of Botany, Central University of Punjab, Mansa Road, Bathinda 151 001, India.

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Home > AIP Conference Proceedings > Volume 2261, Issue 1 > 10.1063/5.0016846

 No Access • Published Online: 05 October 2020

On the conformal change of Douglas space of second kind with special (α, β) -metric

AIP Conference Proceedings **2261**, 030011 (2020); <https://doi.org/10.1063/5.0016846>

Sruthy Asha Baby^{1,a)} and Gauree Shanker^{2,b)}

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The notion of Douglas space of the second kind of the Finsler space with (α, β) -metric was introduced by I. Y. Lee [1], Since then, many of the geometers have studied this topic [2] [14], In this paper, we prove that the Douglas space of second kind with special (α, β) -metric ([17] [18] [19]) $\alpha + \beta + k \frac{\beta^2}{\alpha}$ is conformally transformed to a Douglas space of second kind. Further, we obtain some results which prove that the Douglas space of second kind with certain (α, β) -metrics such as Randers metric, special (α, β) -metric $\alpha + \frac{\beta^2}{\alpha}$, first approximate Matsumoto metric and Finsler space with square metric is conformally transformed to a

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2D and 1D heterostructures based on ZT-MoSe₂ and PdSe₂

AIP Conference Proceedings **2265**, 030692 (2020); <https://doi.org/10.1063/5.0017352>

Mukesh Jakhar¹, Jaspreet Singh¹, Sunita Srivastava², and Ashok Kumar^{1,a)}

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^{a)}Corresponding author: ashokphy@cup.edu.in



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- Schottky barriers

ABSTRACT

There has been an enormous focus on low-dimensional layered transition metal dichalcogenides (TMDs) for new futuristic electronic device fabrication. In this paper, we report the density functional theory based calculations of electronic properties of two dimensional (2D) and one dimensional (1D) heterostructures of ZT-MoSe₂/PdSe₂. The Schottky barrier with p-type contact changes to n-type contact by applying an external electric field and finally into ohmic on further increase in the electric field. The dangling



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Anisotropic and high carrier mobility of 2D α -te

AIP Conference Proceedings **2265**, 030693 (2020); <https://doi.org/10.1063/5.0017367>

Jaspreet Singh¹, Mukesh Jakhar¹, Ashok Kumar^{1,a)}, and K. Tankeshwar²

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Owing to the exotic properties of two-dimensional (2D) materials, a number of new candidates are adding up in the family of 2D materials. Recently, monolayer of tellurium referred as tellurene is emerging as new contenders in 2D materials for various applications. In this paper, we have investigated the electronic structure and carrier mobility of α - phase of tellurene using first principles theory together with deformation potential theory and effective mass approximation. Electronic band structure calculations show α -Te to be indirect gap semiconductor. Our study suggest that the carrier mobility of α -Te is anisotropic and relatively high compared to transition metal dichalcogenides. Combining semiconducting property with high anisotropic carrier mobility, α -Te finds application in

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MoS₂-CoS₂ nano-flowers and nanorods composite for high-performance supercapacitor applications

AIP Conference Proceedings **2265**, 030637 (2020); <https://doi.org/10.1063/5.0017285>

Muzahir Iqbal¹, Nilesh G. Saykar¹, Anil Arya¹, and S. K. Mahapatra^{1,*}

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We have designed MoS₂/CoS₂ composite (MCC) comprising of MoS₂ Nano-Flowers and CoS₂ Nanorods by one-step hydrothermal method. The synthesized composites were characterized by X-ray diffraction pattern, Field emission scanning electron microscopy, cyclic voltammetry, and Galvanostatic charging-discharging techniques. The structural and morphological analysis confirms the composite formation. The MoS₂/CoS₂ composite electrode demonstrates enhanced specific capacitance (response time 0.20 s) of about 216.66 F/g, which is higher than that of MoS₂ electrodes. The high value of energy density (32.26 Wh/kg) at power density of 333.43 W/kg is found for MoS₂/CoS₂ composite

RESEARCH-ARTICLE



Soil Moisture Prediction Using Machine Learning Techniques

Authors: Sagarika Paul, Satwinder Singh [Authors Info & Claims](#)

CIIS 2020: 2020 The 3rd International Conference on Computational Intelligence and Intelligent Systems • November 2020
• Pages 1–7 • <https://doi.org/10.1145/3440840.3440854>

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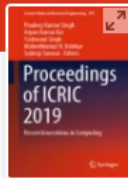
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ABSTRACT

Although - Soil moisture is the main factor in agricultural production and hydrological cycles, and its prediction is essential for rational use and management of water resources. However, soil moisture involves complicated structural characters and meteorological factors, and is difficult to establish an ideal mathematical model for soil moisture prediction. Prediction of soil moisture in advance will be useful to the farmers in the field of agriculture. In this paper, we have used machine learning techniques such as linear regression, support vector machine regression, PCA, and Naïve Bayes for prediction of soil moisture for a span of 12 to 13 weeks ahead. These techniques have been applied on four different datasets collected from 13 different districts of



Proceedings of ICRIC 2019 pp 31–45 | [Cite as](#)

Static, Dynamic and Intrinsic Features Based Android Malware Detection Using Machine Learning

[Bilal Ahmad Mantoo](#)  & [Surinder Singh Khurana](#)

Conference paper | [First Online: 22 November 2019](#)

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Abstract

Android is one of the smartest and advanced operating systems in the mobile phone market in the current era. The number of smartphone users based on the Android platform is rising swiftly which increases its popularity all over the world. The rising fame of this technology attracts everyone toward it and invites more number of hackers in Android platform. These hackers spread malicious application in the market and lead to the high chance of data

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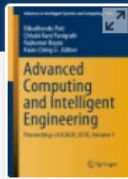
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Advanced Computing and Intelligent Engineering pp 377–389 | [Cite as](#)

Comparative Analysis of Salt and Pepper Removal Techniques for Binary Images

[Usha Rani](#) , [Amandeep Kaur](#) & [Gurpreet Josan](#)

Conference paper | [First Online: 19 February 2020](#)

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Abstract

Binarization is the most important step in the OCR system that converts the gray level or colored images into bi-level form. In the case of degraded images, results after binarization mostly contain noises. Salt and pepper noise of different sizes is the most prevalent noise in binary images. For the better results of OCR process, it is necessary to denoise image before proceeding to the next stage. This paper conducts experiments with different existing salt and pepper noise removal methods such as median filter-based techniques and kFill algorithm-

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Hybrid Image Fusion Method Based On Discrete Wavelet Transform (DWT), Principal Component Analysis (PCA) and Guided Filter

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Andleeb Noor ; Saima Gaffar ; M. T. Hassan ; Mir Junaid ; Aabid Mir ; Amandeep Kaur All Authors

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Abstract

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- I. Introduction
- II. Related Work
- III. Material and Methods
- IV. Experimental Results & Statistical Analysis

Abstract:

Image fusion is the process of integrating the features of multiple images into a single image. The final image represents all important features from each source image. A number of imaging modalities are available which provide diverse information. CT (Computed Tomography) scan gives the information about bones whereas MR (Magnetic Resonance) provide information about soft tissues. There is a requirement of image fusion as the single image does not satisfy sufficient clinical requirements. In this paper, a hybrid approach using Discrete Wavelet Transform (DWT), Principal Component Analysis (PCA) and Guided filter has been proposed. Medical images usually contain noise and are not well contrasted. The proposed method enhances the source images in contrast and reduces noise using wavelet de-noising removal mechanism. Guided filter has been used fusion process to preserve the information about the edges. The proposed method improves the results of multi-modal medic images both visually and metrically.



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[Bilal Ahmad Mantoo](#)

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Abstract

World is becoming small with the increase in the number of mobile phone users. The most influential and having huge market among mobile phones is android. Android is a software used in nowadays smart phones, which not only consists of operating system but also myriad number of key applications. These applications make large number of day to day tasks easy. There are millions of android applications in the market with over 3 billion or more downloads.

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Loop Holes in Cookies and Their Technical Solutions for Web Developers

Authors : Talwinder Singh, Bilal Ahmad Mantoo

Published in: [Recent Innovations in Computing](#)

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Abstract

Session hijacking is the term used to describe the theft of session cookies, i.e., sniff the cookies and use those to impersonate the end user. A cookie is a small-sized text file sent by the Web server to the user's browser and is store at the client side. When a user visits a Web site first time, the Web server generates a fresh cookie. The Web site uses that cookie to track the movements of an authorized user. Main threats of cookies are session fixation attack, cross-site scripting (XSS) attack, session sniffing attack, cookies cloning attack, and cookies controlling malware. The hacker sniffs the network traffic for cookies and uses same to impersonate the user. With performing session hijacking attack, the attacker acts as actual user on Web. In this paper, we are going to discuss some of the technique that helps in optimizing the cookie attacks in Web applications.



Proceedings of International Conference on Trends in Computational and Cognitive Engineering pp 327–334 | [Cite as](#)

Conservation Laws of Einstein's Field Equations for Pure Radiation Fields

[Radhika, R. K. Gupta](#)  & [Sachin Kumar](#)

Conference paper | [First Online: 01 October 2020](#)

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Abstract

In the present paper, conservation laws of some of Einstein's field equations are obtained. Two methods are used to obtain conservation laws. Firstly, direct method via multiplier approach is used and then, new conservation theorem to construct new conserved vectors using Lie symmetries.

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Exact Series Solutions and Conservation Laws of Time Fractional Three Coupled KdV System

[Komal Singla](#)  & [R. K. Gupta](#)

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Abstract

The explicit series solutions of fractional order nonlinear three coupled KdV system are investigated by using power series expansion and group analysis. The nontrivial and nonlocal conservation laws are also determined with the help of extended Noether operators.

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Invariant Analysis for Space–Time Fractional Three-Field Kaup–Boussinesq Equations

[Jaskiran Kaur](#), [Rajesh Kumar Gupta](#) & [Sachin Kumar](#)

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Abstract

Symmetries of the nonlinear fractional differential equations are an interesting and important topic. In this paper, space–time fractional three-field Kaup–Boussinesq equations with Riemann–Liouville fractional derivative are studied for invariant analysis. Symmetries are obtained by using classical Lie’s symmetry approach. Using obtained symmetries, the governing equations reduce to system of fractional ordinary differential equations which contains left and right-sided Erdélyi- Kober (EK) fractional operators.

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On Invariant Analysis, Symmetry Reduction and Conservation Laws of Nonlinear Buckmaster Model

[Pinki Kumari](#) , [R. K. Gupta](#) & [Sachin Kumar](#)

Conference paper | [First Online: 01 October 2020](#)

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Abstract

In this work, a systematic investigation on invariant analysis of Buckmaster model, raised in mathematical physics, is performed. A general set of symmetries and corresponding reductions of the considered equation are obtained. Also, by employing nonclassical approach, it is concluded that no supplementary, nonclassical-type symmetries are admitted by the analysed model. Further, it is also observed that multiplier of any order in the direct construction method, suggested by Anco and Bluman, gives only one local conservation law

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On the Mild Solutions of Impulsive Semilinear Fractional Evolution Equations

[Anoop Kumar](#) & [Pallavi Bedi](#) 

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Abstract

In this manuscript, we establish the existence result of mild solutions for semilinear fractional evolution equations of order $1 < \alpha < 2$ with impulsive conditions. The existence result is obtained by means of analytic operator functions and classical fixed point technique. In order to assure the applicability of the obtained result, an example is presented in the last section.

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Residual Power Series Solution of Fractional bi-Hamiltonian Boussinesq System

[Sachin Kumar](#) & [Baljinder Kour](#) 

Conference paper | [First Online: 01 October 2020](#)

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Abstract

In this paper, the residual power series method (RPSM) which is based on the generalized Taylor's series formula has been used to investigate the approximated analytical solution for the fractional bi-Hamiltonian Boussinesq system. The solution of governing equation is calculated in the form of speedily convergent series. Reliability of the method is discussed with some graphical representations, which shows the accuracy and fast convergence of the

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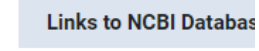
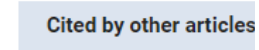
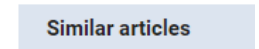
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A case study of Covid-19 epidemic in India via new generalised Caputo type fractional derivatives

[Pushpendra Kumar](#)¹ and [Vedat Suat Erturk](#)²

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Abstract

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The first symptomatic infected individuals of coronavirus (Covid-19) was confirmed in December 2020 in the city of Wuhan, China. In India, the first reported case of Covid-19 was confirmed on 30 January 2020. Today, coronavirus has been spread out all over the world. In this manuscript, we studied the coronavirus epidemic model with a true data of India by using Predictor-Corrector scheme. For the proposed model of Covid-19, the numerical and graphical simulations are performed in a framework of the new generalised Caputo sense non-integer order derivative. We analysed the existence and uniqueness of solution of the given fractional model by the definition of Chebyshev norm, Banach space, Schauder's second fixed point theorem, Arzel's-Ascoli theorem, uniform boundedness, equicontinuity and Weissinger's fixed point theorem. A new analysis of the given model with the true data is given to analyse the dynamics of the model in fractional sense. Graphical simulations show the structure of the given classes of the non-linear model with respect to the time variable. We investigated that the mentioned method is copiously strong and smooth to implement on the systems of non-linear fractional differential equation systems. The stability results for the projected algorithm is also performed with the applications of some important lemmas. The present study gives the applicability of this new generalised version of Caputo type non-integer order derivative in mathematical epidemiology. We assumed that the fractional order derivative

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Abstract

Novel coronavirus (COVID-19), a global threat whose source is not correctly yet known, was firstly recognised in the city of Wuhan, China, in December 2019. Now, this disease has been spread out to many countries in all over the world. In this paper, we solved a time delay fractional COVID-19 SEIR epidemic model via Caputo fractional derivatives using a predictor–corrector method. We provided numerical simulations to show the nature of the diseases for different classes. We derived existence of unique global solutions to the given time delay fractional differential equations (DFDEs) under a mild Lipschitz condition using properties of a weighted norm, Mittag–Leffler functions and the Banach fixed point theorem. For the graphical simulations, we used real numerical data based on a case study of Wuhan, China, to show the nature of the projected model with respect to time variable. We performed various plots for different values of time delay and fractional order. We observed that the proposed scheme is highly emphatic and easy to implementation for the system of DFDEs.

1 INTRODUCTION

Novel coronavirus (COVID-19), a global threat whose source is not correctly yet known, was firstly recognised in the city of Wuhan, China, in December 2019.^{1, 2} Now, this disease has

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