ALLIANCE UNIVERSITY
CENTRE for RESEARCH

RESEARCH PUBLICATIONS

AUGUST 2024

RESEARCH PUBLICATIONS

JULY 2024

" Research is creating new knowledge. "

Neil Armstrong

" If we knew what we were doing, it wouldn't be called research, would it? "

Albert Einstein

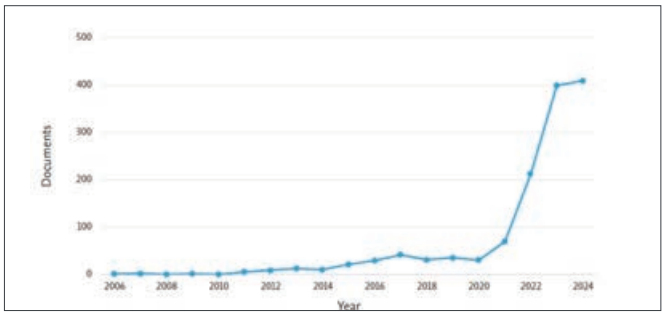
" Research is formalized curiosity. It is poking and prying with a purpose. "

Zora Neale Hurston

1,316
Documents

436
Authors

Documents by Year



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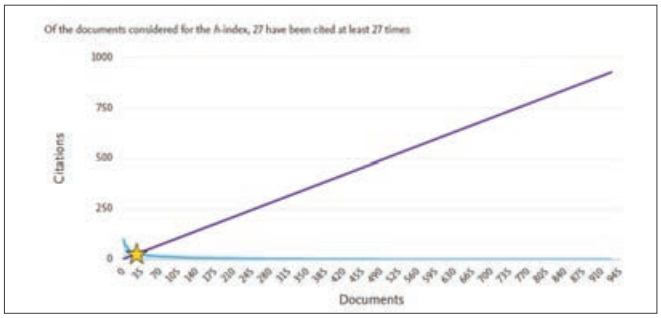
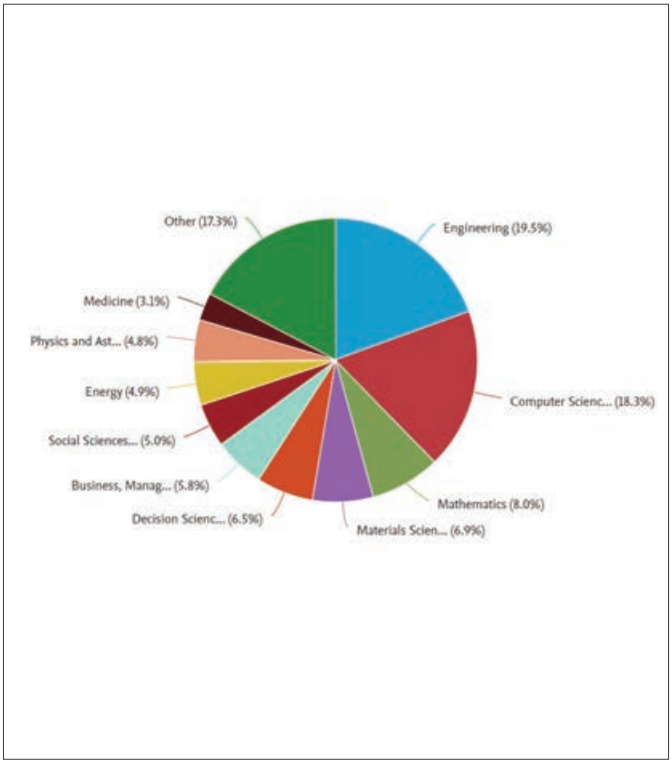


Documents by Subject Area



Summary

1147	478	4101	3.6	2.32
Scholarly Output	Authors	Citation Count	Citations per Publication	Field-Weighted Citation Impact

21.9%
All Open Access

Publication by Journal Quartile

Quartiles	Publications	Publication share (%)
Q1 (top 25%)	250	37.3
Q2 (26% - 50%)	172	25.6
Q3 (51% - 75%)	135	20.1
Q4 (76% - 100%)	114	17.0

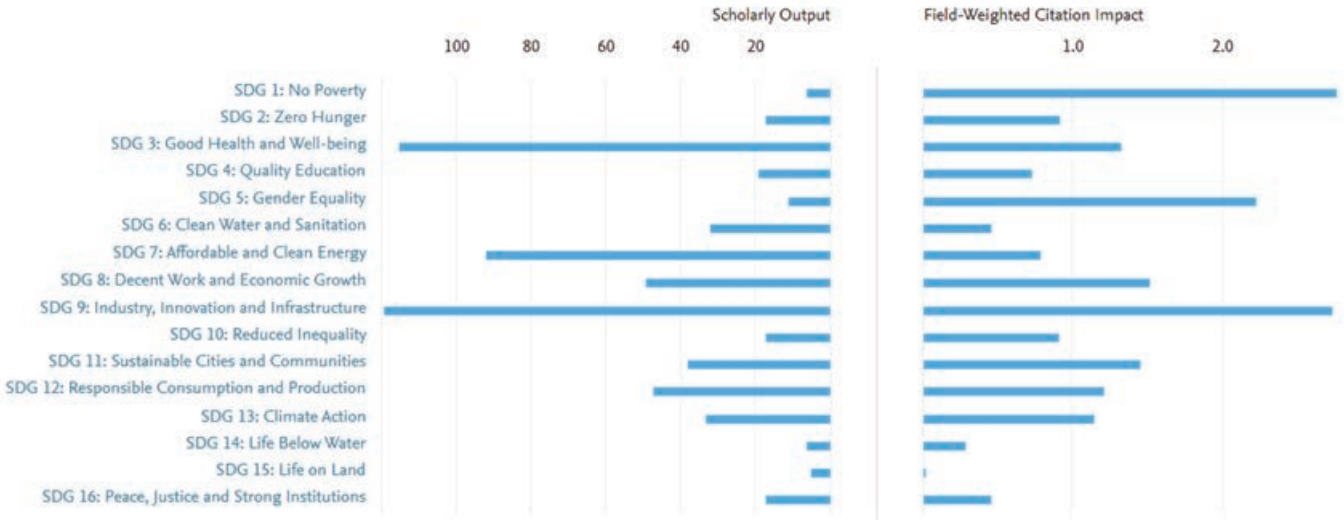
Cumulative shares	Publications	Publication share (%)
Q1 to Q2 (top 50%)	422	62.9
Q1 to Q3 (top 75%)	557	83.0

Geographical Collaboration Overall

International, national and institutional collaboration by Alliance University in the selected year range.

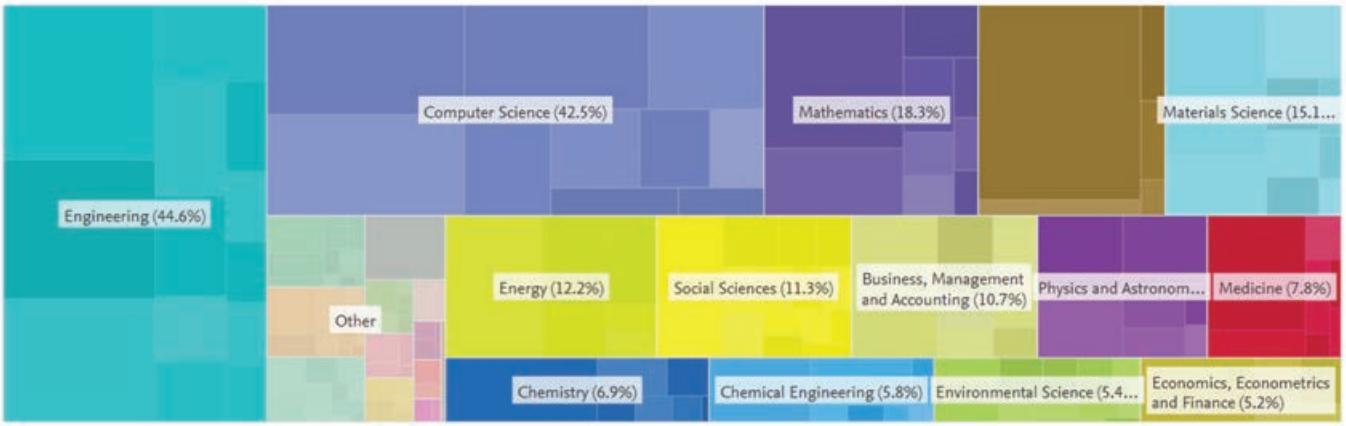
Metric		Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
International collaboration	33.7%	387	2,318	6.0	2.60
Only national collaboration	46.3%	531	1,544	2.9	2.88
Only institutional collaboration	13.0%	149	163	1.1	0.67
Single authorship (no collaboration)	7.0%	80	76	0.9	0.40

Publication by SDG



Subject Areas

Segment size represents relative publication share per Subject Area. Note that a publication can be mapped to multiple Subject Areas.



ABOUT ALLIANCE UNIVERSITY

Alliance University is a Private University established in Karnataka State by Act No.34 of year 2010 and is jointly recognized by the University Grants Commission (UGC), New Delhi, Bar Council of India (BCI) and the All-India Council for Technical Education (AICTE), New Delhi. Since its inception in 2010, Alliance University has been a forerunner in higher education, calling out to the new generation of scholars, engineers, scientists, artists, people in business, social reformers helping to shape and transform societies and communities through and beyond, around the world. Alliance University with a vibrant and picturesque campus in Bengaluru, one of the fastest growing cities in India, offers more than 20 undergraduate and postgraduate majors to approximately 7000 students of diverse backgrounds. Currently, that trailblazing spirit makes Alliance University, one of the most sought-after universities in the world, featuring top-ranked academic programmes such as Alliance School of Business, Alliance College of Engineering and Design, Alliance School of Law, and Alliance Ascent College, and newly commenced Alliance School of Liberal Arts.

Alliance University is a leader in global education, with world-class infrastructure, state of the art laboratories, international visiting faculty, exchange programmes with leading universities in the US, UK, and European Union, and linkages with Research Labs across the world. Education at Alliance University is designed to inspire our students to become critical thinkers and to lead and change the world.

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

07 AFFORDABLE AND CLEAN ENERGY

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

CYBER SPACE AND OUTER SPACE SECURITY

Periyasami, Karthikeyan, Katina, Polinpapilinho F, **Ramasamy Rajagopal**,

Cyber Space and Outer Space Security Pages 1 - 2668 June 2024

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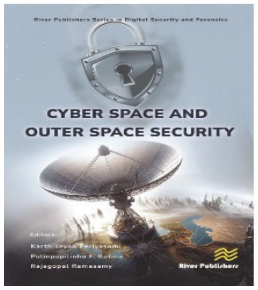

River Publishers Series in Digital Security and Forensics

Cyber Space and Outer Space Security Forthcoming

Editors:
Karthikeyan Periyasami, RV University, Bengaluru, India
Polinpapilinho F. Katina, University of South Carolina Upstate, USA
Rajagopal Ramasamy, Alliance University, India

ISBN: 9788770041881 e-ISBN: 9788770041874

Available: October 2024

Abstract

This book delves into cutting-edge research in cyberspace and outer space security, encompassing both theoretical and experimental aspects. It provides mitigation measures and strategies to address the identified challenges within. It covers a spectrum of topics including techniques and strategies for enhancing cyberspace security, combating ransomware attacks, and securing autonomous vehicles. Additionally, it explores security and surveillance systems involving autonomous vehicles, resilience schemes against security attacks using blockchain for autonomous vehicles, security analysis of autonomous drones (UAVs), the cybersecurity kill chain, the internet of drones (IoD), and cyberspace solutions to counteract attacks. The discussion extends to mitigation strategies against weaponized AI in cyber-attacks, countermeasures for both autonomous vehicles and cyberspace attacks, as well as the limitations and future prospects of artificial intelligence (AI) and data defense in aerospace cybersecurity. A network comprising nodes can establish both cyberspace and outer space platforms for data exchange. Cyberspace finds diverse applications, including commercial endeavors and military defense. The integration of autonomous vehicles, unmanned aircraft systems (UAS), and drones into outer space environments is facilitated through their connection to cyberspace. One illustrative example involves the utilization of blockchain-based secure drone systems for product delivery, leveraging the combined capabilities of cyberspace and outer space security technologies. This book elucidates the intricate dynamics between cyber operations and the expanding realm of autonomous outer cyberspace, presenting new security challenges arising from heightened complexity and emerging vulnerabilities.

Author keywords- Artificial Intelligence; Data engineering; Machine learning; Metaverse

Indexing/Quartile - Scopus/Q1 | **Percentile** - 92nd | **Impact Factor** - 3.8 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

COMPARATIVE STUDY OF SOMBOR INDEX AND ITS VARIOUS VERSIONS USING REGRESSION MODELS FOR TOP PRIORITY POLYCYCLIC AROMATIC HYDROCARBONS

Kirana B.; Shanmukha M.C.; **Usha A.**

Scientific Reports Open Access Volume 14, Issue 1 December 2024 Article number 19841

Dr. Usha Arcot
Professor,
Alliance School of Applied Mathematics

> Sci Rep. 2024 Aug 27;14(1):19841. doi: 10.1038/s41598-024-69442-z.

Comparative study of Sombor index and its various versions using regression models for top priority polycyclic aromatic hydrocarbons

Abstract

The aromatic compounds having structural configurations with two or more fused benzene rings are the polycyclic aromatic hydrocarbons (PAHs). Topological indices are valuable tools for studying the structure property relationships of PAHs and also helps in predicting various properties and activities. They find applications widely in computational chemistry, drug design and QSPR studies. This article focuses on analysing the potential predictive index for Sombor index (SO), elliptic Sombor index (ESO), Euler Sombor index (EU), reverse Sombor index (RSO), reverse elliptic Sombor index (RESO) and reverse Euler Sombor index (REU) using regression models for top priority 38 PAHs. From the study it is evident that, SO and RSO have proved to be potential predictive indices among the considered degree-based and reverse degree-based indices. The variation of best predictive index with minimal RMSE are plotted for linear, quadratic and cubic regression models for better understanding.

Author keywords- PAHs; Physicochemical properties of PAHs; Regression models; Vertex degree-based topological indices

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

07 AFFORDABLE AND CLEAN ENERGY

CYBERSECURITY KILL CHAIN IN OUTER SPACE AND CYBERSPACE SECURITY

Geetha A.; Keerthika V.; Deepak Raj D.M,

Cyber Space and Outer Space Security Pages 81 - 958 June 2024

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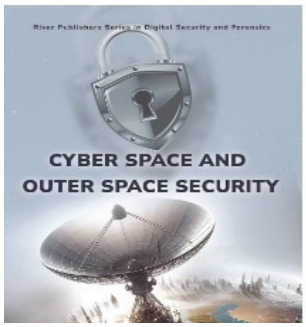

River Publishers Series in Digital Security and Forensics

Cyber Space and Outer Space Security Forthcoming

Editors:
Karthikeyan Periyasami, RV University, Bengaluru, India
Polinpapilinho F. Katina, University of South Carolina Upstate, USA
Rajagopal Ramasamy, Alliance University, India

ISBN: 9788770041881 e-ISBN: 9788770041874

Available: October 2024

Abstract

The convergence of cyberspace and space presents new risks and vulnerabilities as technological development ushers in a period in which humankind is more dependent on infrastructure in space. In light of space activities and the necessity of safeguarding space-based systems, this book chapter investigates the application of the Cybersecurity Kill Chain framework. The Cybersecurity Kill Chain, which was originally created to counteract cyber threats on Earth, has been modified to take into account the particulars of environments in orbit.

Author keywords- Cyber space and outer space security, cyber security, Blockchain, deep learning, internet of drones, unmanned aircraft systems (UAS)

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Indexing/Quartile - Scopus/Q1 | **Percentile** - 82nd | **Impact Factor** - 3.4 | SDG

SYNTHESIS OF A NOVEL ALBESITIV LIGHT WEIGHT HEA COATING ON SS316 USING ATMOSPHERIC PLASMA SPRAY PROCESS

Singh A.; Akhil U.V.; Kishan S.N.; Anoosa Sree R.; Radhika N.; **Rajeshkumar L.**

Heliyon Open Access Volume 10, Issue 1630 August 2024 Article number e35999

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Alliance University, Bangalore, INDIA

Abstract

High Entropy Alloys (HEAs) are currently a subject of significant research interest in the fields of materials science and engineering. They are rapidly evolving due to their exceptional properties, and there is considerable focus on expanding their application potential by developing HEA coatings on various substrate materials. This area of study holds promise for advancing technology and innovation in diverse industries. In this study, a novel equiatomic AlBeSiTiV Light Weight HEA was synthesized via mechanical alloying and was sprayed on the substrate SS316 by the thermal spray process. The microstructural characterization revealed that synthesized HEA had a major FCC phase and the average coating thickness was observed to be 150 μm. The average microhardness was measured to be 975 ± 13 HV for the coating which was five times than the substrate. The coated samples' wear resistance was found out using a pin-on-disc apparatus by varying the wear process parameters and Taguchi's L27 Orthogonal Array was used to interpret the parametric influence on wear rate. ANOVA and regression analysis revealed applied load to be the most significant factor followed by distance and velocity. The major wear mechanisms observed were adhesion abrasion and oxidation, and the formation of tribolayer was observed at higher velocity and distance.

Author keywords- Light weight high entropy alloy; Mechanical alloying; Mechanical property; Metallurgical characterization; Thermal spray; Tribology

02 ZERO HUNGER

Indexing/Quartile - Scopus/Q1 | **Percentile** - 88th | **Impact Factor** - 8.6 | SDG

SYNTHESIS OF WASTE DERIVED BIMETALLIC (Fe/Ca) Oxy-iodide (WD-BMOX) ENCAPSULATED WITH PVDF BASED NANOSPHERE (WD-BMOX-P) AS SOLAR ACTIVE AGENT: AN EFFICIENT PHOTODEGRADATION OF ANTIBIOTIC

Shabnam; **Talreja N.**; Chauhan D.; Ashfaq M.

Sustainable Materials and Technologies Volume 41 September 2024 Article number e01081

Dr. Neetu Talreja
Associate Professor,
Department of Sciences,
Alliance University, Bangalore, INDIA

Abstract

Tetracycline (TC) pharmaceutical compound is the third most used antibiotic after penicillin and quinolones, which developed bacterial resistance against them and environmental toxicity due to partially metabolized within humans and animals. At the same time, waste products (WPs) including food, agriculture, and plastic waste significantly increased day-by-day with the growing population. Therefore, there is a pleading requirement to develop a solar active agent that effectively degrades environmental pollution as well as reduces the burden of WPs. In this context, the present works focus on the development of waste-derived bimetallic (Fe/Ca) Oxy-iodide (WD-BMOX) encapsulated with PVDF-based nanosphere (WD-BMOX-P) as a solar active agent for the degradation of TC antibiotics. The band gap values of the synthesized WD-BMOX-P-based nanosphere are easily altered by changing the ratio of Fe/Ca. The lowest band gap values were observed to be 1.95 eV of the WD-BMOX-P-1:2, whereas upon increasing the Ca within the nanosphere band gap value significantly increases. The incorporation of PVDF polymer within the WD-BMOX-P aided advantages to formed nanosphere and improved oxygen vacancy, thereby high degradation efficiency. The highest degradation of TC antibiotics 96.8% and 69% was observed using WD-BMOX-P-1:2 nanosphere at 1 mg/L and 10 mg/L, of TC antibiotics within 60 min of solar irradiation, respectively. Moreover, 88% and 100% photodegradation of TC antibiotics was observed at pH 10 and the presence of H2O2 at 10 mg/L, respectively. The data indicate that the synthesized WD-BMOX-P-based nanosphere might be promising solar active agents, which effectively degrade TC antibiotics from water.

Author keywords- Environmental remediation; Photocatalyst; Sustainability; Tetracycline; Waste-derived material. characterization; Thermal spray; Tribology

Indexing/Quartile - Scopus/Q1 | **Percentile** - 96th | **Impact Factor** - 10.1 | SDG

04 QUALITY EDUCATION
09 INDUSTRY, INNOVATION AND INFRASTRUCTURE
17 PARTNERSHIPS FOR THE GOALS

RECENT DEVELOPMENTS IN NATURAL FIBER HYBRID COMPOSITES FOR BALLISTIC APPLICATIONS: A COMPREHENSIVE REVIEW OF MECHANISMS AND FAILURE CRITERIA

Devarajan B.; **Lakshminarasimhan R.**; Murugan A.; Rangappa S.M.; Siengchin S.; Marinkovic D. *Facta Universitatis, Series: Mechanical Engineering Open Access Volume 22, Issue 2, Pages 343 - 383August 2024*

Dr. Rajeshkumar Lakshminarasimhan
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Facta Universitatis, Series: Mechanical Engineering

Facta Universitatis, Series: Mechanical Engineering (FU Mech Eng) is an open access peer-reviewed international journal published by the University of Niš (Republic of Serbia). High quality, refereed papers are published three times a year. Papers reporting original theoretical and/or practice oriented research or extended versions of the already published conference papers are all welcome. The scope of the journal covers the whole spectrum of Mechanical Engineering. Papers for publication are selected through peer reviewing to ensure originality, relevance, and readability. In doing that, the objective is not only to keep the high quality of published papers, but also to provide a timely, thorough and balanced review process.
Editor-in-Chief: Dragan Marinković

Abstract

The use of lightweight natural fiber functional composites in the manufacturing of ballistic protective materials has garnered significant attention in recent years. This is due to their superior mechanical properties, cost-effectiveness, and environmental sustainability. Ballistic panels are constructed using multiple layers of diverse composites, which collectively exhibit excellent mechanical properties. These properties enable them to withstand strong impacts enhancing their capability for different applications in defense, military, and aerospace components. The primary focus of this review is to examine the different influential factors that govern the development of novel polymeric materials for current ballistic applications. It also explores various research approaches, such as experimental, analytical, numerical modeling, and empirical techniques. The review highlights both internal factors, such as material composition, and external factors, such as projectile parameters (e.g., nose angles, projectile shape, and projectile size). These factors are crucial for optimizing the robust ballistic performance of natural fiber-based polymer composites. In addition, various valuable insights to develop more effective and sustainable ballistic protective materials for applications in bulletproof helmets, defense, aerospace, and military sectors have also been elaborated. Consequently, the article presents a comprehensive review of the impact of utilizing various natural fibers as alternative materials to Kevlar for armor structures, offering a state-of-the-art perspective and challenges faced in full-scale implementation.

Author keywords- Ballistic mechanism; Ballistic protection; Failure criterion; Multilayer armor; Natural Fiber Composites

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Indexing/Quartile - Scopus/Q1 | **Percentile** - 82nd | **Impact Factor** - 3.4 | SDG

EFFECT OF POWDER COMPOSITION, PTAW PARAMETERS ON DILUTION, MICROSTRUCTURE AND HARDNESS OF NI–CR–SI–B ALLOY DEPOSITION: EXPERIMENTAL INVESTIGATION AND PREDICTION USING MACHINE LEARNING TECHNIQUE

Chenrayan V.; Shahapurkar K.; Manivannan C.; **Rajeshkumar L.**; Sivakumar N.; **Rajesh sharma R.**; Venkatesan R.,

Heliyon Open Access Volume 10, Issue 1630 August 2024 Article number e36087

Dr. C Venkatesh
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Abstract

The implementation of hard-facing alloy on the existing materials caters the need for high-performance surfaces in terms of wear and high temperatures. The present research explore the effect of Plasma Transferred Arc Welding (PTAW) parameters and powder composition on dilution, microstructure and hardness of the commonly used hard-facing alloy Ni–Cr–Si–B powder. The hard-facing alloy was deposited with three weight proportions of boron (2.5 %, 3 % and 3.5 %). The statistical-based Grey Relational Analysis (GRA) followed by a Machine Learning Algorithm (MLA) was implemented to identify the ideal parameters and degree of significance of each parameter and for the prediction of the responses. The dilution percentage, microstructure analysis, and phase detection were estimated through elemental analysis, Scanning electron Microscopy (SEM) and X-ray Diffraction Analysis (XRD) respectively. The experimental and modelling results revealed that 400 mm/min of scanning speed, 8 gm/min of powder delivery, 14 mm of stand-off distance, and 120 A of current were the optimal parameters along with 3.5 wt% of boron powder composition to yield a better dilution, microstructure and hardness.

Author keywords- Chromium boride, Dilution, Grain growth, Heat affected zone, GRA, Machine learning

07 AFFORDABLE AND CLEAN ENERGY

Indexing/Quartile - Scopus/Q1 | **Percentile** - 82nd | **Impact Factor** - 4.1 | SDG

PERYLENE BISIMIDES – ADVANCED SYNTHESIS AND PHOTOELECTRIC APPLICATIONS

Bahadur V.; Yadav N.; Chavali M.; Kumar P.; Singh B.K.

Dyes and Pigments Volume 231 December 2024 Article number 112389

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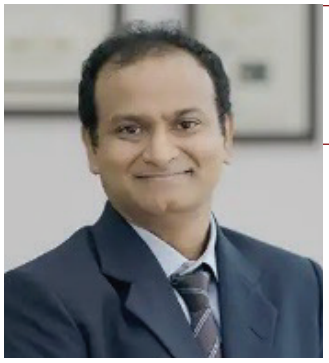
Abstract

This review offers an overview of the synthesis and photoelectric applications of various derivatives of perylene bisimides at different positions, spanning from the imide to bay positions, achieved over the past decade. The synthesis of PBIs involves several routes, including classical methods such as condensation reactions and modern strategies like click chemistry and photochemistry. These methods offer control over the molecular structure, allowing for tailored properties suited for specific applications. In photoelectric applications, PBIs exhibit exceptional characteristics like exceptional photostability, strong absorption within the visible spectrum, and effective charge mobility. These attributes render PBIs excellent candidates for applications such as organic photovoltaics, OLEDs, sensors and organic field-effect transistors. In this review we delve into the development of novel synthetic methodologies, highlighting recent advances in synthetic tools such as C–C coupling and C–H activation. Additionally, the review explores the diverse photoelectric applications of these derivatives, encompassing optical properties, redox behavior, molecular self-assembly, and photo-induced electron transfer characteristics.

Author keywords- C–C coupling; C–H activation; Optical properties; Perylene bisimide; Photoelectric; Redox behavior

Indexing/Quartile - Scopus/Q1 | **Percentile** - 93rd | **Impact Factor** - 4.6 | SDG



DETAILED REPORT ON THE MEASUREMENT OF THE POSITIVE MUON ANOMALOUS MAGNETIC MOMENT TO 0.20 PPM

Ramachandran S., D. P. Aguillard

Physical Review D, Open Access, Volume 110, Issue 31 August 2024, Article number 032009

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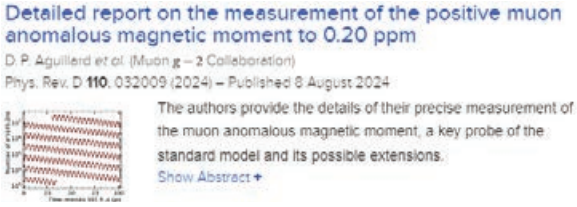
Detailed report on the measurement of the positive muon anomalous magnetic moment to 0.20 ppm
D. P. Aguillard et al. (Muon g − 2 Collaboration)
Phys. Rev. D 110, 032009 (2024) – Published 6 August 2024
The authors provide the details of their precise measurement of the muon anomalous magnetic moment, a key probe of the standard model and its possible extensions.
Show Abstract +

Abstract

We present details on a new measurement of the muon magnetic anomaly, aμ=(gμ-2)/2. The result is based on positive muon data taken at Fermilab's Muon Campus during the 2019 and 2020 accelerator runs. The measurement uses 3.1 GeV/c polarized muons stored in a 7.1-m-radius storage ring with a 1.45 T uniform magnetic field. The value of aμ is determined from the measured difference between the muon spin precession frequency and its cyclotron frequency. This difference is normalized to the strength of the magnetic field, measured using nuclear magnetic resonance. The ratio is then corrected for small contributions from beam motion, beam dispersion, and transient magnetic fields. We measure aμ=116592057(25)×10-11 (0.21 ppm). This is the world's most precise measurement of this quantity and represents a factor of 2.2 improvement over our previous result based on the 2018 dataset. In combination, the two datasets yield aμ(FNAL)=116592055(24)×10-11 (0.20 ppm). Combining this with the measurements from Brookhaven National Laboratory for both positive and negative muons, the new world average is aμ(exp)=116592059(22)×10-11 (0.19 ppm).

Indexing/Quartile - Scopus/Q1 | **Percentile** - 87th | **Impact Factor** - 7.4 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

A REVIEW OF BIO-BASED NANOCELLULOSE EPOXY COMPOSITES

Ilyas R.A.; Asyraf M.R.M.; **Rajeshkumar L.**; Awais H.; Siddique A.; Shaker K.; Nawab Y.; Wahit M.U.

Journal of Environmental Chemical Engineering, Volume 12, Issue 5October 2024
Article number 113835

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Abstract

Plant fibers are the most widely focused materials these days to promote the utilization of natural and renewable biomaterials. Utilization of cellulosic-based nanomaterials derived from plant fibers finds a wide range of engineering applications. Due to the many appealing properties of nanocellulose-based composites, they have recently emerged as one of the most notable green materials. They have shown greater potential in various fields of advanced engineering such as biomedical, construction, and food packaging applications. Based on the analysis of the most recent investigations, new developments in the preparation, modification, and emerging applications of nanocellulose-based materials are described in this review. Since nanocellulose exists in several forms such as nanocrystalline cellulose, bacterial nanocellulose and nanofibrillated cellulose, they can render environmentally friendly bio nanocomposites with exceptionally good material properties. Accordingly, an overview of fundamental ideas in nanocellulose-based bio nanocomposites for environment-friendly applications is provided in this review. Overview of the derivatives of the nanocellulose with regards to their chemical structure, various methods of extracting nanocellulose from multiple sources, techniques for fabricating nanocellulose-based green composites, and the properties of nanocellulose-based composites are comprehensively discussed. Additionally, the novel and anticipated markets for nanocellulose products as well as the use of nanocellulose in nanocomposites in a variety of application industries are also highlighted. The LCA of nanocellulose composites at three stages including the assessment of NC sources, NC isolation techniques, and NC composite manufacturing is addressed, to promote the economy and sustainability aspects of the nanocellulose-based products. The

issues, challenges, and opportunities of nanocellulose-based materials are also discussed at the end of the review. This review serves as a guide for materialists and researchers who are seeking a prospective and systematic review of nanocellulose and its derivative materials. © 2024 Elsevier Ltd

Author keywords- CNF; Extraction; Life Cycle Assessment, Applications; Nanocellulose; Nanocomposite

Indexing/Quartile - Scopus/Q1 | **Percentile** - 87th | **Impact Factor** - 7.7 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

EXTRACTION OF MICROCRYSTALLINE CELLULOSE FROM FICUS BENGHALENSIS LEAF AND ITS CHARACTERIZATION

Narayanaperumal S.; Divakaran D.; Singh M.K.; Sanjay M.R.; Siengchin S.; **Suyambulingam I.**

International Journal of Biological Macromolecules Volume 277 October 2024 Article number 134394

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Abstract

Microcrystalline cellulose (MCC) is a crucial component in various industries, including pharmaceuticals, culinary, and cosmetics. The growing demand for MCC has spurred research into extraction methods. This study focused on extracting MCC from Ficus benghalensis using acid hydrolysis to convert the alpha-cellulose content of its leaves into MCC. The solvent used in this process was recyclable for further use. The extracted MCC was characterized by its physicochemical properties, including density, yield percentage, and structural characteristics. The yield was approximately 39.68 %, and the density was low at 1.518 g/cm3, making it suitable for filler applications. Fourier transform spectroscopy and UV–visible analysis identified functional groups of cellulose. X-ray diffraction analysis revealed a crystallite size of 1.560 nm and a crystallinity index of 66.43 %, indicating suitability for related applications. ImageJ determined a mean particle size of 36.545 μm, while scanning electron microscopy showed distinct surface orientations. Atomic force microscopy revealed surface roughness, root mean square, ten-point average roughness, skewness, and kurtosis. Elemental analysis indicated high concentrations of carbon (20.1 %) and oxygen (34 %). Based on these physicochemical features, the extracted MCC could be a valuable source for applications such as filler in reinforcement technology and coating material in pharmaceutical products.

Author keywords- Bio filler; Biopolymer; Carbohydrates; Cellulose; Ficus Benghalensis

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG 07 AFFORDABLE AND CLEAN ENERGY

ADAPTIVE BAYESIAN OPTIMIZATION ALGORITHM FOR UNPREDICTABLE BUSINESS ENVIRONMENTS

Maitra, Sarit

ACM International Conference Proceeding SeriesPages 78 - 8524 April 2024 8th International Conference on Intelligent Systems, Metaheuristics and Swarm Intelligence, ISMSI 2024 Virtual, Online 24 April 2024 through 25 April 2024 Code 201567

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Professor,
Alliance School of Business,
Alliance University, Bangalore, INDIA

Adaptive Bayesian Optimization Algorithm for Unpredictable Business Environments

Author: Sarit Maitra | Authors Info & Claims

ISMSI '24: Proceedings of the 2024 8th International Conference on Intelligent Systems, Metaheuristics & Swarm Intelligence
Pages 78 - 85 • https://doi.org/10.1145/3665065.3665078

Abstract

This paper introduces an adaptive Bayesian optimization (BayesOpt) framework with dynamic conditioning and jitter mechanisms. The new framework enhances the adaptability and effectiveness of optimization in unpredictable business environments. The dynamic scaling in this framework dynamically modifies the mean objective function in each iteration, and adaptive conditioning functions. The adaptive acquisition jitter function enhances adaptability by adjusting the jitter of the acquisition function. The framework is tested using single-objective, multi-objective, and decoupled multi-objective functions. Statistical analyses which include t-statistics, p-values, and effect size measures (Cohen's d and Hedges g) reveal the superiority of the proposed framework over the original Bayes optimization. The primary contribution is developing a novel and effective optimization approach in stochastic environments, especially in the context of supply chain inventory management.

Author keywords- Adaptive conditioning; Dynamic scaling; Effect size; Optimization algorithm; Probabilistic modeling; Stochastic environments

Indexing/Quartile - Scopus/Q1 | **Percentile** - 95th | **Impact Factor** - 6.1 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

EVOLUTIONARY ANALYSIS OF TONOPLAST INTRINSIC PROTEINS (TIPS) UNRAVELING THE ROLE OF TIP3s IN PLANT SEED DEVELOPMENT

Sudhakaran S.; Mandlik R.; Kumawat S.; Raturi G.; Gupta S.K.; **Shivaraj S.M.**; Patil G.; Deshmukh R.; Sharma T.R.; Sonah H., Plant Physiology and Biochemistry, Volume 215 October 2024 Article number 109022

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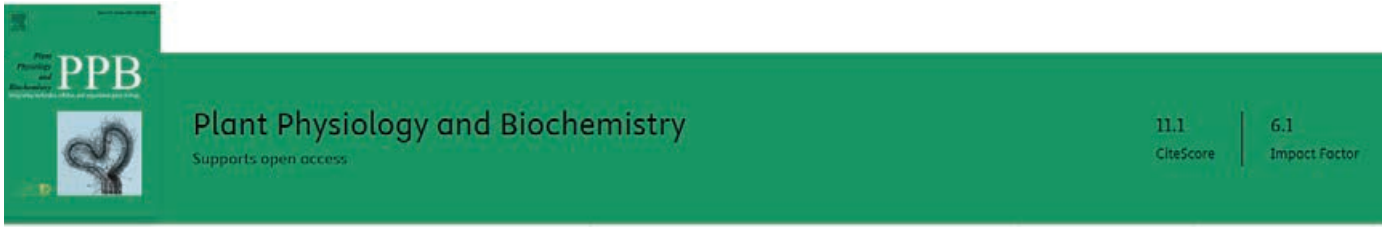

Abstract

Tonoplast intrinsic proteins (TIPs) are crucial in facilitating the transportation of water and various small solutes across biological membranes. The evolutionary path and functional roles of TIPs is poorly understood in plants. In the present study, a total of 976 TIPs were identified in 104 diverse species and subsequently studied to trace their lineage-specific evolutionary path and tissue-specific function. Interestingly, TIPs were found to be absent in lower forms such as algae and fungi and they evolved later in primitive plants like bryophytes. Bryophytes possess a distant class of TIPs, denoted as TIP6, which is not found in higher plants. The aromatic/arginine (ar/R) selectivity filter found in TIP6 of certain liverworts share similarity with hybrid intrinsic protein (HIP), suggesting an evolutionary kinship. As plants evolved to more advanced forms, TIPs diversified into five different sub-groups (TIP1 to TIP5). Notably, TIP5 is a sub-group unique to angiosperms. The evolutionary history of the TIP subfamily reveals an interesting observation that the TIP3 subgroup has evolved within seed-bearing Spermatophyta. Further, TIPs exhibit tissue-specific expression that is conserved within various plant species. Specifically, the TIP3s were found to be exclusively expressed in seeds. Quantitative PCR analysis of TIP3s showed gradually increasing expression in soybean seed developmental stages. The expression of TIP3s in different plant species was also found to be gradually increasing during seed maturation. The results presented here address the knowledge gap concerning the evolutionary background of TIPs, specifically TIP3 in plants, and provide valuable insights for a deeper comprehension of the functions of TIPs in plants.

Author keywords- Aquaporin (AQP); Evolution; Gene expression; Phylogeny; Seed-bearing plants; Tonoplast intrinsic protein (TIP)

07 AFFORDABLE AND CLEAN ENERGY

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

FOUNDATIONS OF GENERATIVE AI

Babu T.; Nair R.R.; Ebin P.M.,

The Pioneering Applications of Generative AI, Pages 136 - 16617 July 2024

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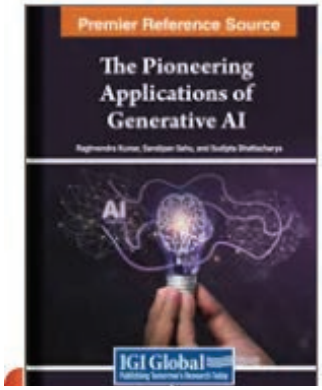

The Pioneering Applications of Generative AI
Raghvendra Kumar, Sandipan Sahu, Sudipta Bhattacharya
Release Date: July, 2024 | Copyright: © 2024 | Pages: 367
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Abstract

The chapter delves into the foundations of generative artificial intelligence (AI), offering an introductory overview and a nuanced understanding of its basic principles, history, and evolution. It navigates through core technologies underpinning generative AI, including neural networks, machine learning models, and key algorithms. The introduction traces generative AI's roots, unraveling its historical trajectory. It progresses to elucidate fundamental concepts, exploring neural networks' structures, functionalities, and applications. The study examines diverse machine learning models and pivotal algorithms crucial to generative AI, shedding light on their roles in generating innovative outputs. This abstract encapsulates a comprehensive journey through generative AI's core elements, serving as a foundational guide for understanding its origins, principles, and technologies.

Indexing/Quartile - Scopus/Q1 | **Percentile** - 79th | **Impact Factor** - 4.8 | SDG 09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

LEVERAGE OF ALUMINIUM OXYNITRIDE ON THE IMPACT RESISTANCE OF KEVLAR-IMPREGNATED EPOXY COMPOSITES: EXPERIMENTAL AND NUMERICAL EVALUATION UNDER LOW-VELOCITY IMPACT

Chenrayan V.; Shahapurkar K.; Kiran M.C.; Ngarajan B.; Arunachalam K.P.; Weiss A.D.; Fouad Y.; Almehmadi F.A.; Soudagar M.E.M.,

Polymer Composites, 2024

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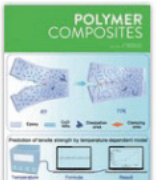

Polymer Composites: Volume 45, Issue 13
Pages: i, 11533-12494
10 September 2024

Abstract

The present work highlights the benefits of matrix strengthening through the inclusion of hard particles within the resin-impregnated woven Kevlar mat. Aluminium Oxynitride (ALON) particles are added to epoxy resin by 5, 10, and 15 volume percentages. The test coupons were developed through a hand-lay-up technique to estimate the low-velocity impact resistance. The characterization was performed through EDAX and SEM to ensure the presence of the ALON particles and their homogenous distribution respectively. Low-velocity testing is preferred to assess the capacity of the materials to rebound the incident energy. The damage assessment was made to estimate the material's stiffness. The compression after impact (CAI) was executed to observe the strength of the material after the impact. The post-CAI micrographic observation reveals the delamination history. The results manifest that the ALON–rich coupon exhibits higher impact resistance to the scale of 33.33% than that of the ALON-free coupon. The damage assessment and CAI results annunciate the lesser damage and higher compressive strength of ALON-rich material respectively. The micrographic study studied after the CAI reveals the delamination and failure behavior. Additionally, explicit numerical assessment was conducted to validate the experimental results. A good agreement is attained between the experimental results and numerical predictions. The enriched stiffness of the synthesized material makes it a perfect candidate for structural application where the frequency of impact loading is high. Highlights: Development of ALON reinforced Kevlar-Epoxy composites for low-velocity impact applications. Evaluating the performance of developed composites under low-velocity impact loading. Determining the optimal volume percentage of ALON in the composites. Studying the fractography of developed composites. Correlation between experimental and numerical studies.

Author keywords- absorbed energy; aluminium oxy nitride; compression after impact; delamination; elastic energy; low-velocity impact

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

OPTIMAL MANAGEMENT OF RESOURCES IN CLOUD INFRASTRUCTURE THROUGH ENERGY AWARE COLLABORATIVE MODEL

Rajagopal M.; **Karuppasamy S.K.**; Hemalatha S.; Sivasakthivel R., *Proceedings - 3rd International Conference on Advances in Computing, Communication and Applied Informatics, ACCAI 20242024 3rd International Conference on Advances in Computing, Communication and Applied Informatics, ACCAI 2024 Chennai 9 May 2024 through 10 May 2024 Code 201333*

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Abstract

As the infrastructures of cloud computing provides paramount services to worldwide users, persistent applications are congregated using large scale data centres at the customer sides. For such wide platforms, virtualization technique has been incorporated for multiplexing the essential sources available. Due to the extensive application variations in the workloads, it is significant to handle the resource allocation methodologies of the virtual machines (VM) for assuring the Quality of Service (QoS) of cloud. On concentrating this, the paper proposed a Decentralized Energy-Aware Collaborative Model (DEACM) for effectively managing the data centres in cloud infrastructures. Initially, the optimal model for system management and power management are declared. Then, functions of workload vectors and data collection about workloads has been carried out for optimal selection of virtual machines to migrate for balancing loads efficiently. This can be further applied for Target-based VM Migration Algorithm for determining the migrating target for VM. Moreover, the algorithm involved in energy utilization with managed QoS. The developed DEACM is evaluated using CloudSim platform and the results are discussed. The results exemplify that the DEACM can balance the workload across variety of machines optimally and provide reduced energy consumption to the complete system efficiently.

Author keywords- Decentralized EnergyAware Collaborative Model (DEACM); Destination based VM Migration Algorithm; Resource Allocation; Virtual Machine Selection

Indexing/Quartile - Scopus/Q3 | **Percentile** - 38th | **Impact Factor** - 0.9 | SDG 17 PARTNERSHIPS FOR THE GOALS

SMART FERTILIZING USING IOT MULTI-SENSOR AND VARIABLE RATE SPRAYER INTEGRATED UAV

Ghanimi H.M.A.; Suguna R.; Jeyaraj J.P.G.; Sreekanth K.; **Rangasamy R.**; Sengan S.,
Scalable Computing Open Access Volume 25, Issue 5, Pages 3766 – 37772024

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Scalable Computing: Practice and Experience

English title: Scalable Computing: Practice and Experience
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Publisher: West University of Timisoara
Country: RO
Language of publication: EN

Abstract

This paper introduces a "Smart Fertilizing Using Internet of Things (IoT) Multi-Sensors" system to enhance fertilizer management in agriculture. The system has four main parts: the Nutro Determining Unit (NDU), the Nutro Sensing Unit (NSU), the Nutro UAV Variable Fertiliser Spray System, and a Variable Rate Unmanned Aerial Vehicle (UAV) Sprayer model. The NDU collects vital data on Soil Moisture (SM) and Environmental Conditions (EnC) using advanced IoT cameras, while the NSU consolidates and normalises the data for advanced analysis using Heuristic Decision Trees (HDT) and Random Forest (RF) algorithms. In India, a data-driven UAV system uses IoT and UAV technologies to determine nutrient needs and create a prescription map for fertilizer application. The approach caused increases in the efficient utilisation of resources, Crop Yield (CY), and ecological footprint when it underwent evaluation in a crop maize field that was 14 hectares in size. A fresh benchmark for Smart Farming (SF) techniques has been set up by this method of operation, which is motivated by data and symbolises an important innovation in modern and ecologically conscious SF methods.

Author keywords- Crop Yield; IoT; Smart Farming; Smart Fertilizing; Sprayer Model; UAV

11 SUSTAINABLE CITIES AND COMMUNITIES

Indexing/Quartile - Scopus/Q1 | **Percentile** - 63rd | **Impact Factor** - 6.2 | SDG

HYDROPHOBICITY AND HIGH-TEMPERATURE MECHANICAL BEHAVIOUR OF HARD AND OPTICALLY TRANSPARENT NANOCOMPOSITE AL–SI–N THIN FILMS

Soni;Sharma S.K.; Mishra S.K.,
Journal of Materials Research 2024

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Abstract

Nanocomposite Al–Si–N thin films were deposited on SS 304, silicon and quartz substrates through magnetron sputtering. Silicon addition in AlN has transformed the coating structure from a single-phase coating into a nanocomposite structured film. It affected the phase formation and interband electronic transition in the Al–Si–N thin film. XPS study suggests the formation of Al–N, Si–N and composite Al–Si–N phases in the Al–Si–N film. The Urbach energy increases from 535 to 763 meV with addition of Si, for nanocomposite Al–Si–N film. No significant change in hardness and microstructure were observed up to 400 °C. The Al–Si–N film showed good hydrophobicity on both SS 304 and quartz substrates along with high hardness values. Low wettability and high strength make them a potential candidate for protective optical coatings as they are optically transparent too. Graphical abstract: (Figure presented.)

Author keywords- Al–Si–N thin films; Hydrophobicity; Nanocomposite coatings; Sputtering

Indexing/Quartile - Scopus/Q4 | **Percentile** - 14th | **Impact Factor** - 0.38 | SDG 03 GOOD HEALTH AND WELL-BEING

A QUALITY-OF-SERVICE STUDY FOR DOWNLINK SCHEDULING ALGORITHMS IN MOBILE NETWORKS

Krishnamoorthy R.; **Nagaraj S.**; Robert N.R.; Donald A.C.; Suresh K.; Cynthia T., *Lecture Notes in Networks and Systems, Volume 1050 LNNS, Pages 436 - 4432024 23rd International Conference on Intelligent Systems Design and Applications, ISDA 2023, Olten11 December 2023 through 13 December 2023 Code 315609*

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Abstract

Internet usage and the number of applications/users growth is going in an unprecedented manner. In these days, lot of users are changed themselves to use internet-based applications rather than traditional voice service. The fundamental of voice-based communication is shifted to packet data access for satisfying the human needs through internet based mobile applications. 4G network is an IP supported rising technology for the past decade and at present also because of un availability service of 5G in all the places. Still, 4G is ruling the globe and the number of subscribers kept growing only. In these days, this remains on the list of latest research topics. Under 4G technology lot of research problems are exist like QoS, Uplink and Downlink Scheduling, Security, Mobility etc., Inspite of discussing that several issues, this paper mainly focusing the QoS in Downlink scheduling algorithms. Also, it presents the issues of various existing QoS downlink scheduling algorithms, names, QoS aware/unaware, parameters used/simulated, drawbacks of those algorithms and result verifications etc. Packet scheduling plays a crucial role for providing Quality of Service (QoS) to the mobile users. Ultimately, it gives some suggestions to explore more further about QoS based research work in Mobile Networks.

Author keywords- : Applications; Channel Aware; Mobile Networks; Quality of Service; Scheduling.

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

11 SUSTAINABLE CITIES AND COMMUNITIES

ANALYZING THE PERFORMANCE OF CONFORMABLE AND NON-CONFORMABLE PATCH ANTENNAS

Dhariwal S.; Lamba V.K.; Pathak J.; **Choudhary A.; Kumar G.**,
2024 5th International Conference for Emerging Technology, INCET 2024 2024 5th IEEE International Conference for Emerging Technology, INCET 2024 Belgaum24 May 2024 through 26 May 2024 Code 201275

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Abstract

This paper presents a performance analysis between a conventional triangular shaped patch antenna and a future reconfigurable patch antenna. There are different materials with different electronic properties for the simulation of triangular shaped patch antenna. All the materials for the triangular patch antenna are simulated using FEKO tool. Materials selected for triangular patch antenna are Copper, Single-wall Carbon Nano-tube (SCNT), Multiple-wall Carbon Nano-tube (MCNT) and Graphene. For the futuristic antennas, cotton fabric based reconfigurable patch antenna is also analyzed and compared with triangular shaped patch antenna. Graphene based triangular patch antenna has been analyzed best out of other materials. Reconfigurable cotton fabric-based patch antenna provides better bandwidth and results are validated through simulation and experimental setup.

Author keywords- Graphene; MCNT; Patch Antenna; Return Loss; SCNT; VSWR

Indexing/Quartile - Scopus/NA | **Percentile** - 20th | **Impact Factor** - 0.37 | SDG

03 GOOD HEALTH AND WELL-BEING

17 PARTNERSHIPS FOR THE GOALS

FORECASTING THE INCIDENCE OF NEGLECTED TROPICAL DISEASES AND VECTOR-BORNE DISEASES

Nair R.R.; Babu T.; Pavithra K.; Sharma S.; Kuntappalavar A.; Singh S.; Rai V.A.

Lecture Notes in Electrical Engineering, Volume 1194, Pages 535 - 5492024 6th International Conference on Recent Innovations in Computing, ICRIC 2023Jammu 26 October 2023 through 27 October 2023 Code 315599

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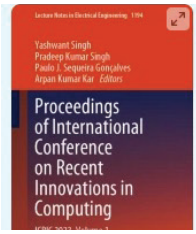

Proceedings of International Conference on Recent Innovations in Computing

ICRIC 2023, Volume 1

Conference proceedings | © 2024

Abstract

Dengue fever is a common vector-borne sickness in tropical regions, particularly in India, Bangladesh, and Pakistan. This disease, caused by mosquitoes, affects people of all ages in more than a hundred nations throughout the world. The research looks into real-time series forecasting and analysis, applying three regression models and developing a weighted average forecasting model for infectious diseases. From 2014 to 2017, the integrated diseases monitoring program of the Indian Government provided monthly statistics on dengue cases. The data was analyzed using three regression models: support vector regression, neural network, and linear regression, with performance indicators including mean absolute error (MAE), root mean square error (RMSE), and mean square error (MSE). The study found that the proposed weighted ensemble model outperformed, with an emphasis on its ability to minimize predicting mistakes. The fundamental goal of the study, forecasting error reduction, was met thanks to the weighted ensemble model's higher performance.

Author keywords- Dengue; Forecasting; Regression; Weighted ensemble

Indexing/Quartile - Scopus/Q4 | **Percentile** - 16th | **Impact Factor** - 0.51 | SDG

DRINKING ADDICTION PREDICTIVE MODEL USING BODY CHARACTERISTICS MACHINE LEARNING APPROACH

Karmakar M.; Al Kafi M.A.; Sabbir W.; Afridi A.S.; Raza D.M.,
Communications in Computer and Information Science Volume 2092 CCIS, Pages 364 - 3832024 3rd International Conference on Advanced Network Technologies and Intelligent Computing, ANTIC 2023 Varansi 20 December 2023 through 22 December 2023 Code 316879

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Advanced Network Technologies and Intelligent Computing

Third International Conference, ANTIC 2023, Varanasi, India, December 20–22, 2023, Proceedings, Part III

Conference proceedings | © 2024

Abstract

Alcohol addiction exacts a toll on personal well-being and community dynamics, causing profound losses in health, relationships, and societal well-being. Our study is dedicated to predicting drinkers' types based on body attributes, distinguishing between heavy drinkers and normal drinkers an essential endeavor in ensuring a workforce that aligns with contemporary needs, where alcohol-free and moderate alcohol consumers are crucial for specialized duties. In our rigorous evaluation of machine learning algorithms, Random Forest (Accuracy: 73.08%, F1: 73.36%) and K nearest neighbor (Accuracy: 79.55%, F1: 74.28%) emerge as pivotal tools for accurately identifying drinking patterns. The novelty of our work lies not only in the efficacy of machine learning algorithms but also in the nuanced exploration of individual features. This insight highlights the complexity of predicting drinking patterns and emphasizes the need to refine models for practical applications, ensuring the selection of workers best suited for their roles. This study contributes to the growing body of knowledge on early detection of drinking patterns, addressing the critical demand for a workforce capable of fulfilling specialized duties with alcohol-free or moderate alcohol consumption requirements. Our work, therefore, stands as a proactive response to the evolving needs of industries and workplaces, underlining the importance of aligning personnel attributes with job requirements for enhanced productivity, safety, and overall well-being.

Author keywords- Addiction prediction; Early detection; Epidemic alcohol consumption; Global drug trafficking; Machine learning; Physical characteristics; Predictive modeling; Substance research

Indexing/Quartile - Scopus/Q2 | **Percentile** - NA | **Impact Factor** - 4.18 | SDG 11 SUSTAINABLE CITIES AND COMMUNITIES

EXTRACTION AND CHARACTERIZATION OF THESPESIA POPULNEA LEAF CELLULOSE: A BIOMASS TO BIOMATERIAL CONVERSION

Velmurugan T.; Suganya Priyadharshini G.; **Suyambulingam I.**; Siengchin S.,

Biomass Conversion and Biorefinery 2024

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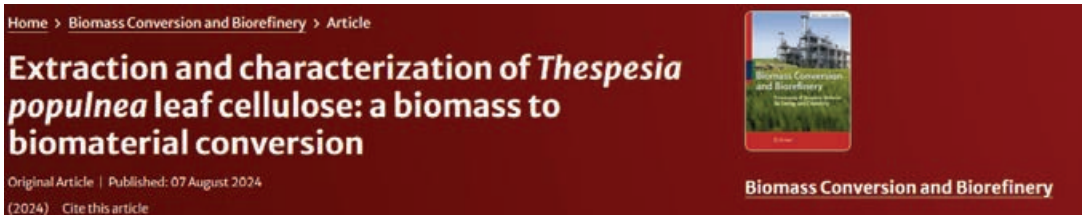

Abstract

The research focuses on exploring the use of cellulose obtained from Thespesia populnea leaves as a strengthening component, in polymer composites. It delves into the characteristics and qualities of this cellulose material. The authors utilized an alkaline treatment method to break down the cellulose-hemicellulose-lignin complex found in Thespesia populnea leaves leading to the extraction of cellulose fibers. Various characterization techniques were applied to the extracted cellulose, such as UV—Vis spectroscopy, X-ray diffraction (XRD), Fourier transform infrared (FTIR) spectroscopy, field emission scanning electron microscopy (FESEM), and thermogravimetric analysis. The researchers examined how light interacts with cellulose noting an absorption band within the 250—300 nm wavelength range. XRD analysis revealed a crystallinity index of 73.7% for the cellulose material. FTIR analysis helped identify its groups while FESEM provided insights into the morphology of the cellulose fibers showing an average size of 6.37 μm. The cellulose from Thespesia populnea leaves is thermally stable up to a temperature of 248 °C evidenced by thermogravimetric analysis. The main goal was to assess Thespesia leaf celluloses' suitability as a reinforcing material for polymer composites by understanding its properties and behavior for applications. The study suggests that this leaf-derived cellulose could be a reinforcement agent in polymer composites due to its characteristics. If this cellulose material is effectively integrated into composites, it could improve characteristics, decrease weight, and support the advancement of materials.

Author keywords- Biofiller; Biomass; Biowaste; Cellulose; Thespesia populnea leaf

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG 09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

MACHINE LEARNING-BASED OPTIMIZATION FOR IDENTIFYING EFFECTIVE DRUGS IN BREAST CANCER ON AN IN VITRO PLATFORM

Saxena M.; Rao P.V.V.S.E.; **Choudhary A.**; Reddy P.S.; Sharma V.K.; Kumar V., *2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024 Pages 1756 – 1760 2024 4th IEEE International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024 Greater Noida 14 May 2024 through 15 May 2024 Code 201583*

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Machine Learning-Based Optimization for Identifying Effective Drugs in Breast Cancer on an In Vitro Platform

Publisher: IEEE Cite This PDF

Mahima Saxena ; P v v s Eswara Rao ; Amar Choudhary ; P. Srinivas Reddy ; Vipin Kumar Sharma ; Vinish Kumar **All Authors**

Abstract

In this innovative quest for more efficient irrigation, we investigate the combined use of sensor technology and machine intelligence to optimize agricultural water usage. We collect precise data on essential variables, including water flow, temperature, humidity, soil moisture, and water level, every 15 days by promptly deploying sensors in the field to monitor them in real-time. We use the vast amount of data available to us to train machine learning models, including Recurrent Neural Networks (RNN), K-Nearest Neighbours (KNN), Artificial Neural Networks (ANN), and Convolutional Neural Networks (CNN), specifically for streams that are anticipated to have a certain distribution. CNN has exceptional precision with a decoding accuracy of 94.5% in visual signal interpretation, surpassing ANN, KNN, and RNN which achieve lower accuracies of 91.1%, 88.7%, and 83.6% respectively. Our investigation uncovers a fluid interaction between sensor data and model training, leading to each model exhibiting unique characteristics. These findings not only showcase the accuracy with which machine learning can distribute water, but they also signify a noteworthy progress in resource-efficient and sustainable agriculture. In addition to generating mathematical discoveries, our research establishes the foundation for advanced irrigation systems that smoothly integrate mechanical and natural processes in agricultural fields.

Author keywords- breast cancer; drug responses; in vitro platform; machine learning models; personalized treatment

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - 0.363 | SDG

17 PARTNERSHIPS FOR THE GOALS

DEMYSTIFYING YOUTH'S PLAY INTENTION OF MULTIPLAYER ONLINE MOBILE GAME: AN UTAUT3 MODEL PERSPECTIVE

Gupta S.; Mathur N.; **Priyanka**,
Global Knowledge, Memory and Communication 2024

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Global Knowledge, Memory and Communication
Issue(s) available: 34 – From Volume: 67 Issue: 1/2, to Volume: 73 Issue: 6/7

Abstract

Purpose: The primary objective of this study is to identify and examine the effects of the various determinants of the unified theory of acceptance and use of technology (UTAUT3) model on multiplayer online mobile games (MPOMGs) adoption and actual play behaviour of young gamers. Design/methodology/approach: The research used an online survey method to collect data from a sample of 685 Indian youth. The participants were selected using a convenience sampling procedure. Structural equation modelling technique was used to evaluate the sufficiency and structural relationship between the various dimensions of the UTAUT3 model in the context of MPOMG. Findings: The findings of the study indicate that the dimensions of "Price Value" and "Facilitating Condition" did not show a significant relationship with the play intention of MPOMG among youth. However, the newly introduced dimension, "Personal Innovativeness," was found to have a significant impact on predicting the play intention of MPOMG. Research limitations/implications: This study was limited to young Indian gamers. Therefore, future study is needed to analyse across cultures and regions. Moreover, this study contributes to the existing scholarly literature on the implementation of a newly established technological framework, namely, UTAUT3, in the context of MPOMG research. Hence, this study offers a fresh viewpoint for comprehending the youth's inclination towards MPOMG. Additionally, various determinants the affects the MPOMG adoption and play behaviour is highly relevant for industry managers and game developers to create MPOMG, that are more likely to attract and retain users, leading to increased levels of engagement and success. Originality/value: UTAUT3 is a novel framework to determine the technology adoption in a different context. UTAUT3 model is still unexplored and adopted in MPOMG play intention research. Therefore, this study provides a novel perspective to understand the youth's intention to play the MPOMG in the newly developed technology adoption model perspective.

Author keywords- Multiplayer mobile game; Online game; Personal innovativeness; SEM; UTAUT3; Youth consumer

Indexing/Quartile - Scopus/Q4 | **Percentile** - 14th | **Impact Factor** - 0.57 | SDG

07 AFFORDABLE AND CLEAN ENERGY

BRAIN TUMOUR DETECTION FROM MRI IMAGES USING ENHANCED EXTREME MACHINE LEARNING PROBABILISTIC SCALING

Geetha A.; Keerthika V.,

Lecture Notes in Networks and Systems Volume 954 LNNS, Pages 475 - 4872024 11th International Conference on Intelligent Computing and Applications, ICRTC 2023 New Delhi 2 June 2023 through 3 June 2023 Code 316169

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Proceedings of International Conference on Recent Trends in Computing

ICRTC 2023

Conference proceedings | © 2024

Abstract

The development of aberrant cells, some of which may develop into cancer, results in a brain tumour. Magnetic resonance imaging (MRI) scans frequently reveal brain malignancies. MRI scans are used to identify the abnormal tissue growth in the brain. In several research publications, algorithms for machine learning and deep learning are used to detect brain tumours. It can be used to identify brain tumours quickly and accurately in MRI scans, which makes it simpler to treat patients. These forecasts also help the radiologist act quickly. In the suggested work, preprocessing, segmentation, feature extraction, and classification are all included. An MRI brain image's undesirable pixels are removed using the Wiener filter during the preprocessing stage. To divide up the data, we applied the fuzzy means clustering (FCM) algorithm. In the second stage, the characteristics of the MRI's GLCM are extracting the features from the image associated with the MRI brain image. An enhanced extreme learning machine probabilistic scaling is applied in the classification step to categorize the prevailing output image and the interrogation image. The results demonstrate how effective and reliable the suggested methodology is when compared to other recent studies.

Author keywords- Extreme machine earning; Fuzzy means clustering; GLCM; MRI

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG 09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

THE SIMPLIFIED AND ENLARGED MEMORY MANAGEMENT WITH EFFICIENCY THROUGH CELLS

Radhakrishnan N.; Alsalami Z.; Al-Qaisy S.A.; Chamoli S.; Hayder H.; Ghobash A.; Qusayjawad A.

2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024 Pages 1165 - 11682024 4th IEEE International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024 Greater Noida 14 May 2024 through 15 May 2024 Code 201583

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volume 10, pages 1165-1168

The simplified and enlarged memory management with efficiency through cells

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Abstract

Memory with multiple ports is widely employed in numerous domains, especially for parallel computations that require rapidity and efficiency. Conventional SRAM-based memory modules encounter constraints on performance and flexibility, including the need to handle a multitude of write inputs and read outputs. Standard cell-based memory, in contrast, provides greater parameterization and flexibility. However, current tools encounter difficulties in constructing these memories as a result of intricate circuitry and a lack of understanding regarding the regular structure of these arrays. This may occasionally lead to an inability to converge under specific circumstances. New techniques for the physical and logical implementation of many-ported standard cell memory (MPSCMs) are introduced in this study. It is suggested that the traditional design process be substituted with two discrete methodologies that offer direction and control to design tools in order to improve the performance, area utilisation, and power efficiency of these memory arrays. An assessment and evaluation process was undertaken on MPSCM macros of different dimensions utilising a commercial 65 nm CMOS technology. These macros were compared to their equivalents that were developed employing conventional and cutting-edge techniques.

Author keywords- and standard cell memories (SCMs); controlled placement; low-power; manyported memory; register file; Vector register file

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

IMPROVING EARLY DETECTION AND CLASSIFICATION OF LUNG DISEASES WITH INNOVATIVE MOBILENETV2 FRAMEWORK

Tripathi A.; Singh T.; **Nair R.R.**; Duraisamy P.,
IEEE Access Volume 12, Pages 116202 – 116217, 2024

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Journals & Magazines > IEEE Access > Volume: 12

Improving Early Detection and Classification of Lung Diseases With Innovative MobileNetV2 Framework

Publisher: IEEE Cite This PDF

Amrita Tripathi ; Tripty Singh ; Rekha R. Nair ; Prakash Duraisamy **All Authors**

Abstract

Any condition that damages or impedes the normal operation of the lungs is classified as a lung disease, and failure to identify and address it early can potentially lead to false outcomes. To address this challenge, two innovative techniques are proposed for lung disease classification, supporting medical professionals in diagnosing and providing preventive measures at an early stage. The Proposed Model 1 integrates a custom MobileNetV2L2 architecture, that builds upon the MobileNetV2 framework through fine-tuning and customization. This model enhances performance by incorporating a ridge or L2 Regularizer within its dense layer. The Proposed Model 2, custom CNN2 built on CNN as its foundational block, is fine-tuned with ELU as the activation function, replacing ReLU, and incorporates the ridge or L2 regularization technique. The proposed research utilizes two publicly available datasets: DS1(Data Set1), which is the Lung Disease 5-class dataset, and DS2(Data Set2), which is the Lung Disease 4-class dataset and is collected from Kaggle. In comparison to cutting-edge methods like EfficientNet B0, InceptionV3, ResNet, and InceptionResNetV2, the Proposed Model 1's outcomes perform better. It attained 100% validation accuracy, 99.53% training accuracy, and 95.51% test accuracy. Proposed Model 2 achieved testing accuracy of 99.26%, validation accuracy of 91.56%, and training accuracy of 96.79%, the suggested Proposed Model 2 performs quite well. As a supplementary opinion during the diagnostic process, the proposed research is a useful tool for pulmonologists.

Author keywords- contrast limited histogram equalization technique; Convolutional neural networks; DenseNet; InceptionResNetV2; InceptionV3; L2 Regularizer; MobileNetV2

Indexing/Quartile - Scopus/Q3 | **Percentile** - 26th | **Impact Factor** - 3.04 | SDG

11 SUSTAINABLE CITIES AND COMMUNITIES

AN ADVANCE STUDY OF AN EFFICIENT CNN-GROUNDED DEEP LEARNING CLASSIFICATION TECHNIQUE FOR THE DIAGNOSIS OF IOT BASED CARDIAC ARRHYTHMIAS

Devasenapathy D.; Pachlor R.; Ramesh M.; Shanmugaraj G.; **Thomas A.K.**; Sridhar K.
Journal of Intelligent Systems and Internet of Things Volume 13, Issue 1, Pages 166 - 1762024

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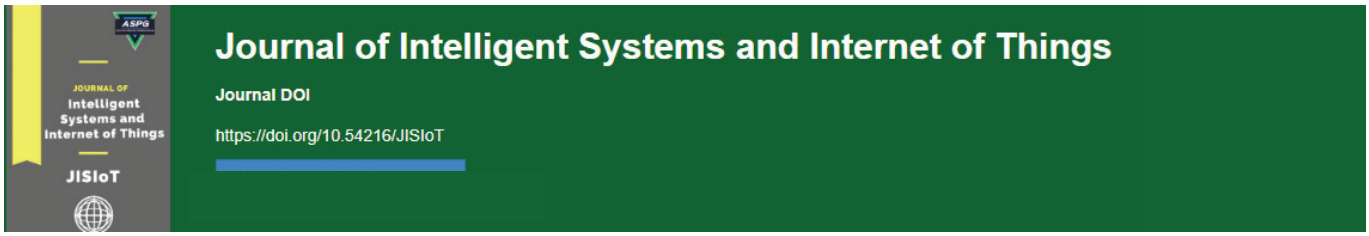


Abstract

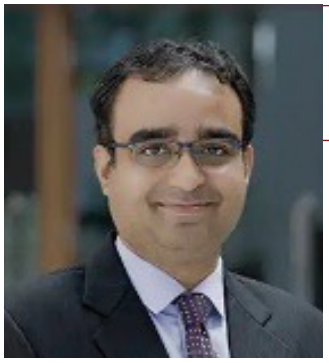
Deep Learning, or DL for short, is an emerging subfield within the larger discipline of machine learning in today's world. The study being conducted in this area is progressing at an immediate stride, and the discoveries are contributing to the progression of technology. Deep learning (DL) methods were developed with the intention of developing a general-purpose learning method that would enable the gradual learning of characteristics at multiple levels without relying on human-engineered features. This was the goal of deep learning. Because of this, the system is able to acquire intricate purposes and directly map input to output by making use of the data that it has acquired which is based on Internet of things (IoTs). This study places an emphasis on the application of CNN (Convolutional Neural Networks), which are a subcategory of DNN (Deep Neural Networks), and it develops an efficient layered CNN for the classification of ECG arrhythmias. Even while FC-ANNs (Fully Connected Artificial Neural Networks), which are sometimes referred to as Multilayer-Perceptron networks, are effective in categorising ECG arrhythmias, the optimization process for many classification networks takes a significant amount of time in terms of computation. In addition, the features extracted by engineers are what define the accuracy of the categorization of ECG arrhythmias. An improved CNN based filtering, feature abstraction, and classification prototypical is established in order to conduct an accurate analysis of an electrocardiogram (ECG). When measured against ANN, the performance was found to have an accuracy rating of 99.6%. Consequently, the CNN model that was suggested is useful to doctors in arriving at the definitive diagnosis of AFL (atrial flutter), AFIB (atrial fibrillation), VFL (ventricular flutter), and VT (ventricular tachycardia). It includes denoising, feature extraction, and categorization as part of its functionality.

Author keywords- AFIB; AFL; CNN; DNN; IoT; VFL; VT

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES



FLUTTER TECHNOLOGY-BASED HYPER-LOCAL E-COMMERCE MARKETING APPLICATION

Tomar A.; **Shukla A.**; Singh B.P.; Gupta V.K.; Mohana R.; Verma H.
2024 5th International Conference for Emerging Technology, INCET 2024 2024 5th IEEE International Conference for Emerging Technology, INCET 2024 Belgaum 24 May 2024 through 26 May 2024 Code 201275

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Flutter Technology-Based Hyper-Local E-Commerce Marketing Application

Publisher: IEEE

Ankit Tomar ; Anurag Shukla ; Brijendra Pratap Singh ; Vishan Kumar Gupta ; Rajini Mohana ; Himanshu Verma **All Authors**

Abstract

As the name suggests, Hyper-local focuses on the close-by region/marketplace. Hyper-local delivery is a concept where the delivery service provider concentrates on local (nearby geographical area) customers. A hyper-local business model integrates the offline and online marketplace and optimizes the workflow, increases efficiency, meets customer demand, and improves local business. By developing this app, our goal is to reduce the impact of Covid-19 (Corona Virus) on small-scale businesses and local stores. We aim to provide the local customer with the products they need in a timely and safe manner at their convenience. This application provides local shop owners and business owners an opportunity to expand. We will use a hybrid hyper-local model to reach our goal as it provides both quality assurance and the possibility to scale. Our app will be cross-platform compatible because of the use of the Flutter framework. Flutter is a user-interface software development framework de- developed by googled for developing high-performance applicationsusing Dart as a base programming language.

Author keywords- application; e-commerce; flutter; hyperlocal; local business; website

Indexing/Quartile - Scopus/Q1 | **Percentile** - 88th | **Impact Factor** - 5.9 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

17 PARTNERSHIPS FOR THE GOALS

WASTE-DERIVED CA AND ZN-BASED BIMETALLIC (CA/ZN) NANORODS ENCAPSULATED CHITOSAN-BASED HAEMOSTATIC DRESSING BANDAGE: A STEP TOWARDS WASTE TO BANDAGES

Thakur P.; Anand Omar R.; **Talreja N.**; Chauhan D.; Ashfaq M.,
Journal of Industrial and Engineering Chemistry 2024

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Abstract

Controlling loss of blood during militant war, traumatic injury, and surgical procedures is the greatest challenge nowadays, which leads to death, thereby the necessity of hemostatic bandages. The present work focuses on the synthesis of waste-derived (WD)-Ca incorporated Zn nanorods encapsulated with chitosan polymers (CZC) to control the loss of blood as well as bacterial infection. The as-prepared CZC bandage was tested against various biochemical tests such as PBS absorption, hemolysis, adsorption of protein, platelets aggregation/ adhesion, blood clotting ability, and antibacterial test assay. The data suggested that the CZC bandage has high biocompatibility, exceptional PBS absorption ability (1402%), platelets aggregation (65%) within 10 min of exposure, protein a loading ability (37 mg/cm2), and 84% blood clotting within a 1 min of exposure. Moreover, the CZC bandage effectively kills/ inhibits both E. Coli and S. aureus bacteria. Therefore, the prepared CZC bandage in this study is simple, economically viable, and sustainable development.

Author keywords- Blood clotting; Hemostatic materials; Waste-derived materials; Wound healing

Indexing/Quartile - Scopus/Q3 | **Percentile** - 39th | **Impact Factor** - NA | SDG

TECHNOLOGY AND SUSTAINABILITY: OPPORTUNITIES AND CHALLENGES

Sambargi S.; Shubha N.S.,

World Sustainability Series Volume Part F3319, Pages 189 – 2052024

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Abstract

The convergence of sustainability and technology presents a dynamic environment with both promising prospects and formidable challenges. Technology has emerged as a critical instrument for addressing global sustainability crises, such as climate change, resource depletion, and environmental degradation. Innovations, such as renewable energy, smart cities, and circular economy models, have the potential to transform the way we live, work, and consume resources, offering benefits such as reduced carbon emissions, increased resource efficiency, and improved quality of life. However, the implementation of technology-driven sustainability programs often faces difficulties, including the digital divide, privacy issues, and ethical concerns. These challenges emphasize the need for responsible and fair use of technology. Striking a balance between innovation and environmental care remains a significant challenge. This chapter explores the intricate relationship between technology and sustainability, highlighting the need for responsible technological breakthroughs that enhance social and ecological well-being while navigating complex ethical, economic, and regulatory issues. Technology serves as both a catalyst and crucible in a world striving for a sustainable future, influencing the direction of social and environmental progress.

Author keywords- Challenges; Opportunities; Sustainability; Technology

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

IOT-ENABLED HEALTH MONITORING SYSTEM FOR SAFEGUARDING VITAL ORGANS WITH CLOUD-BASED DIAGNOSIS AND ADVANCED ALGORITHMS

Ahmad S.K.; Ikra K.M.; Sharma P.; Kaushik Y.; **Choudhary A.**; Tripathi P.K.,
2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024 Pages 1699 - 17042024 4th IEEE International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024 Greater Noida14 May 2024 through 15 May 2024 Code 201583

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Abstract

This study presents a novel IoT-enabled fitness tracking device intended to improve patient care through the capture of real-time physiological records and predictive analytics. The system uses a variety of sensors, including an Arduino UNO, an LM35, a MAX30100 pulse charge and SPo2 sensor, and a stress sensor, to continuously gather health data from ten different patients. Proactive health assessments and early intervention are made possible by the combination of cloud-based analysis and advanced system learning models, such as Support Vector Machines (SVM), Artificial Neural Networks (ANN), K-Nearest Neighbours (KNN), and Recurrent Neural Networks (RNN). Tested on real-world datasets, the experimental results show how effective the device is at making accurate and timely predictions. Notably, SVM is the most accurate variant, closely followed by ANN, KNN, and RNN. The confusion matrices ensure accurate and thorough examination of each version's performance, aiding in selecting the most relevant set of rules for real-time health monitoring to be used by clinicians. The present study, as groundbreaking work, demonstrates a major leap in merging IoT with device expertise in the healthcare sector that usages new possibilities in proactive and personalized treatment strategies. The recommended tool's innovative and reliable predictive analytics can potentially revolutionize patient transportation in the healthcare system.

Author keywords- cloud computing; health monitoring; IoT; machine learning; predictive analytics

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

11 SUSTAINABLE CITIES AND COMMUNITIES

ACCURATE NEOPLASM DIAGNOSIS WITH COMPREHENSIVE MACHINE LEARNING AND DEEP LEARNING APPROACHES

Ashreetha B.; Srinivasa Kumar S.V.S.S.; Srinivas J.S.; Prasad K.D.V.; **Shekhar R.**; Gowda D.V.,

2024 5th International Conference for Emerging Technology, INCET 2024 2024 5th IEEE International Conference for Emerging Technology, INCET 2024 Belgaum 24 May 2024 through 26 May 2024 Code 201275

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Abstract

Machine learning (ML) and deep learning (DL) technologies break in the new line of medical diagnostics that offer tremendous benefits in term of accuracy, efficiency and predicting the outcome of disease, specifically neoplasm detection and classification. In this work, a thorough study of various deep learning and machine learning techniques is presented, including Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Decision Trees, Support Vector Machines (SVMs) as well as other ones, that are applied to the diagnostic task of neoplastic diseases. By means of number of experiments and comparison studies, we do research work to evaluate the extend of these computational methods to change the etiopathogenesis of the disease. The time of diagnosis can be significantly reduced due to the dictation of diagnosis and the detection and classification of the disease become more precise. The integration of ML and DL technologies within clinical settings may not only enhance the diagnostic capabilities but also drive the development of customized treatment plans suitable to a patient's specific characteristics of their disease pathology. Also, our study report on the adaptability of the systems in which they can constantly update their diagnostic performance by taking a new stock of data.

Author keywords- Convolutional Neural Networks; Decision Trees; Deep Learning; Healthcare Technology; Machine Learning; Medical Diagnostics; Neoplasm Detection; Personalized Treatment; Predictive Analytics; Recurrent Neural Networks; Support Vector Machines

Indexing/Quartile - Scopus/Q4 | **Percentile** - 20th | **Impact Factor** - 0.38 | SDG

03 GOOD HEALTH AND WELL-BEING

OIL PRICE VOLATILITY AND ITS IMPACT ON INDUSTRY STOCK RETURN – BI VARIATE ANALYSIS

Bhat S.R.; Yadav J.S.; Kumar C.M.N.; Amar H.A.; Rakesh N.; Kumar S.V.P.
Lecture Notes in Networks and Systems Volume 1080 LNNS, Pages 102 - 1112024 International Conference on Business and Technology, ICBT 2024 Cambridge 19 April 2024 through 20 April 2024 Code 316249

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Abstract

Oil price volatility impacts industries differently depending on a country's status as a net oil importer or exporter. In oil-importing nations like India, sectors such as banking, energy, materials, retailing, transportation, and manufacturing are adversely affected by price fluctuations, while industries like food, beverages, and pharmaceuticals tend to be more resilient. Conversely, oil-exporting countries experience milder effects, with the oil and gas sector bearing the brunt of supply disruptions while other industries remain insulated. Over time, the correlation between oil prices and stock market performance has strengthened, making oil price volatility a systemic risk factor. The source of oil price shocks, whether from demand changes or supply disruptions, significantly influences their impact on stock returns. Notably, there are substantial volatility spillovers between oil and stock markets. This study aims to explore the relationship between oil shocks and industry returns using various multivariate models, highlighting the importance of considering oil as a relevant risk factor in portfolio management.

Author keywords- Deep learning model; Oil Price Volatility; Returns; Risk Factor; Volatility Spillovers

Indexing/Quartile - Scopus/Q4 | **Percentile** - 20th | **Impact Factor** - 0.38 | SDG

03 GOOD HEALTH AND WELL-BEING

FAKE NEWS DETECTION USING MACHINE LEARNING CLASSIFICATION ALGORITHMS

Ramasubramanian C.; Babu T.; Nair R.R.; Muthulakshmi R.,
Lecture Notes in Electrical Engineering Volume 1194, Pages 117 - 1272024 6th International Conference on Recent Innovations in Computing, ICRIC 2023Jammu 26 October 2023through 27 October 2023 Code 315599

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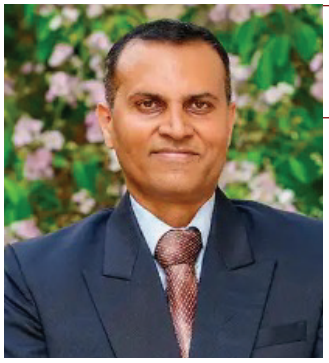
Abstract

In the context of Indian politics in particular, the proliferation of fake news poses a serious threat to the reliability of news and information. To combat this problem, we present a machine learning-based method for identifying false news stories by com-paring a dataset of true and false news items with a model that analyses news titles via vectorization and tokenization. In order to tell the difference between real news and fake propaganda, we're working on a model to appropriately categorize news articles based on their textual content. Our method is tested on a standard collection of news articles in order to gauge its efficacy. Several state-of-the-art methods in the literature are outperformed by our suggested method, demonstrating its superior accuracy in detecting bogus news. Our methodology is particularly well-suited for use in the context of Indian politics, where it can aid in the detection of fake news and the defense of trustworthy news and information sources. A strong and successful methodology for detecting and limiting the effects of fake news, this method can be expanded to additional fields and languages.

Author keywords- Context free grammar; Fake news; Natural language processing; Response generation; Self-learning; Stochastic gradient decent

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG 07 AFFORDABLE AND CLEAN ENERGY



ENERGY MANAGEMENT OF BASE STATION IN 5G AND B5G: REVISITED

Choudhary A.; Kumar G.; Dhariwal S.; Srivastava G.
2024 International Conference on Knowledge Engineering and Communication Systems, ICKECS 2024 2024 2024 International Conference on Knowledge Engineering and Communication Systems, ICKECS 2024 Chikkaballapur 18 April 2024 through 19 April 2024 Code 201554

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Energy Management of Base Station in 5G and B5G: Revisited

Publisher: IEEE Cite This PDF

Amar Choudhary ; Gaurav Kumar ; Sandeep Dhariwal ; Geetika Srivastava **All Authors**

Abstract

The popularity of 5G enabled services are gaining momentum across the globe. It is not only about the high data rate offered by the 5G but also its capability to accommodate myriad of connected devices. To ensure the Quality of Services (QoS), 5G could be deployed either in non-standalone or in standalone mode, having their own merits. Due to infrastructural limitations, non-standalone mode deployment of 5G is preferred as compared to standalone mode. To achieve low latency, higher throughput, larger capacity, higher reliability, and wider connectivity, 5G base stations (gNodeB) need to be deployed in mmWave. Since mmWave base stations (gNodeB) are typically capable of radiating up to 200-400 meters in urban locality. Therefore, high density of these stations is required for actual 5G deployment, that leads to huge power consumption. It is reported that Radio Access Network (RAN) consumes almost 70% of the input power supply. Therefore, energy management methodologies at RAN are required. Many methodologies like symbol shut down, carrier shutdown, deep sleep etc., have been reported in the literature. In this work, a parametric study of these methodologies has been carried out. Based on this study the effective mechanism for energy management has been suggested.

Author keywords- Base station; Energy management; mmWave; RAN

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

OPTIMIZING VEHICLE-TO-VEHICLE (V2V) COMMUNICATION EFFICIENCY WITH KNN-BASED DYNAMIC TIME SLOT ALLOCATION

Devakirubai N.; Velu A.; **Sumathi D.**; Prasanth A.

Proceedings - 2024 International Conference on Social and Sustainable Innovations in Technology and Engineering, SASI-ITE 2024 Pages 60 - 652024 1st International Conference on Social and Sustainable Innovations in Technology and Engineering, SASI-ITE 2024 Tadepalligudem 24 February 2024 through 25 February 2024 Code 201453

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Abstract

In the continually evolving field of vehicular communications, the efficient allocation of time slots for Vehicle-to-Vehicle (V2V) communication is of utmost importance. This work introduces a novel approach that employs a K-Nearest Neighbors (KNN) algorithm to allocate time slots in NR V2X sidelink communications. The allocation is specifically tailored to dynamically adjust to the current density of traffic in real-time. The efficacy of the KNN-based time slot allocation system is assessed through simulating the V2X environment, encompassing a fleet of vehicles. The efficacy of the suggested methodology is assessed in relation to a random allocation technique and it is observed that the suggested strategy notably enhances allocation efficiency, slot utilization, contention window, and communication time. The findings illustrate the capacity of a KNN-based dynamic allocation system to adapt to different levels of traffic congestion, leading to the efficient utilization of network resources and the mitigation of communication latency. Furthermore, the examination of the implementation of priority queues in the allocation process is explored, resulting in enhanced efficiency of the system in scenarios involving a substantial amount of traffic.

Author keywords- Contention window; Dynamic time slot allocation; KNN; V2V communication efficiency; V2V Communication Time

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

07 AFFORDABLE AND CLEAN ENERGY

TECHNICALITIES OF O-RAN FOR 5G AND B5G

Choudhary A.; Srivastava G.; Jha M.K.

2024 International Conference on Knowledge Engineering and Communication Systems, ICKECS 2024 2024 2024 International Conference on Knowledge Engineering and Communication Systems, ICKECS 2024 Chikkaballapur 18 April 2024 through 19 April 2024 Code 201554

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Abstract

Telecom sector across the globe is gradually transiting towards 5G & B5G. This is due to its unparallel advantages of it over the existing technologies i.e. 4G or 3G. At the same time, several new challenges related to Spectrum and Bandwidth, Security, Cost etc. are reported regarding this technical transition. Among these, Interoperability of RAN, and Software Driven Network (SDN) are main starving areas for researchers and developers. The idea of this paper is to provide architectural details of O-RAN, suggested by O-RAN Alliance. Also, in this paper the reader will come to know about functional BBU split. With all these, our purpose is to enable readers to have a basic knowledge of architectural technicalities of O-RAN in detail.

Author keywords- BBU; CU; DU; O-RAN; O-RAN Alliance; RAN; RIC; SDN

Indexing/Quartile - Scopus/Q3 | **Percentile** - 39th | **Impact Factor** - 4.5 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

ANALYZING THE PERFORMANCE OF BERT FOR THE SENTIMENT CLASSIFICATION TASK IN BENGALI TEXT

Banshal S.K.; Uddin A.; Piryani R.

Communications in Computer and Information Science Volume 2092 CCIS, Pages 273 - 2852024 3rd International Conference on Advanced Network Technologies and Intelligent Computing, ANTIC 2023 Varansi 20 December 2023 through 22 December 2023 Code 316879

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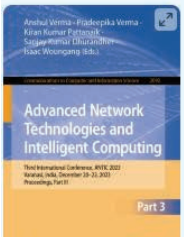

Advanced Network Technologies and Intelligent Computing

Third International Conference, ANTIC 2023, Varanasi, India, December 20–22, 2023, Proceedings, Part III

Conference proceedings | © 2024

Abstract

The recent era has seen significant growth of technologies in the field of Natural Language Processing (NLP). But the scarce resource languages like Bengali have not got much attention from the research community. The BERT language model has laid a very positive impact on the performance of the NLP tasks. Although several others language models came into the scenario, we investigate the performance of BERT model and other conventional methods for the sentiment classification task in Bengali text. The obtained result shows that BERT overperformed other conventional machine learning and lexicon-based methods in all aspects of the performance metrics. Along with BERT, conventional methods namely Logistic Regression, Decision Tree, SVM, Random Forest, Naïve Bayes and Neural Network were implemented. Besides these methods a lexicon-based approach was used to see the overall variation in the results. The lexicon resource for Benali was created for this implementation.

Author keywords- Bengali textual data; BERT; NLP; Sentiment analysis

Indexing/Quartile - Scopus/Q4 | **Percentile** - 20th | **Impact Factor** - 0.38 | SDG 03 GOOD HEALTH AND WELL-BEING

INVESTIGATION OF AUGMENTED REALITY IN THE AGRICULTURE INDUSTRY AND ITS FUTURE

Pavithra K.; Geetha A.

Lecture Notes in Networks and Systems Volume 954 LNNS, Pages 573 - 5832024 11th International Conference on Intelligent Computing and Applications, ICRTC 2023 New Delhi 2 June 2023 through 3 June 2023 Code 316169

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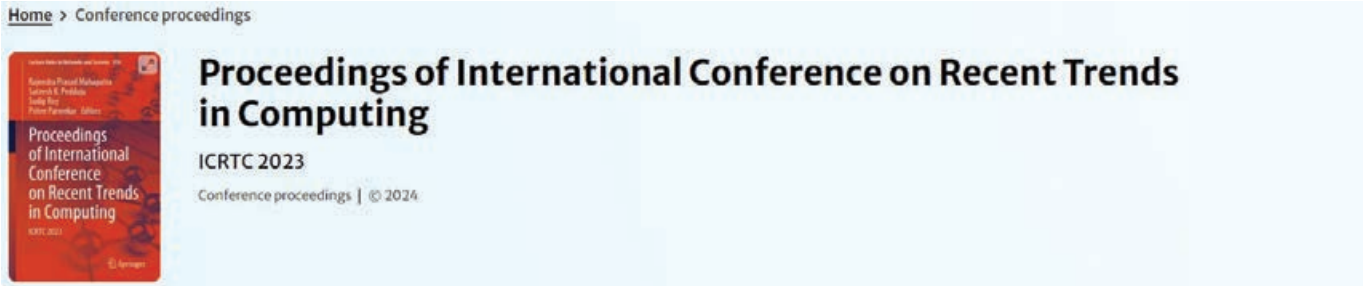

Abstract

The technology of augmented reality (AR) has the potential to boost overall productivity in the agricultural sector. It can be used with other technologies including robotic machinery, artificial intelligence (AI), the Internet of Things (IoT), predictive analytics, and precision algorithms. Along with the growing food demand, several microeconomic factors are anticipated to encourage the spread of AR in the agricultural sector. New farmers can now receive creative and safer teaching using augmented reality technology. Young farmers can learn about potential mishaps and mitigate future risks as a result of being electronically exposed to agricultural machinery. Given the facts, it is plausible to assume that augmented reality (AR) technologies are still in use. It has been reasonable to assume that AR technology is still being developed and is not yet sufficiently advanced for agricultural applications. However, there is a significant chance that it will be a big success.

Author keywords- Agriculture; AR; Farmers; Technology

Indexing/Quartile - Scopus/Q4 | **Percentile** - 20th | **Impact Factor** - 0.38 | SDG 03 GOOD HEALTH AND WELL-BEING

MACHINE LEARNING-BASED TEXT CATEGORIZATION WITH BAG OF WORDS

Singh U.K.; Prabhu Shankar B.; Chinnaiyan R.; **Jain N.**

Lecture Notes in Electrical Engineering Volume 1194, Pages 577 - 5872024 6th International Conference on Recent Innovations in Computing, ICRIC 2023 Jammu 26 October 2023 through 27 October 2023 Code 315599

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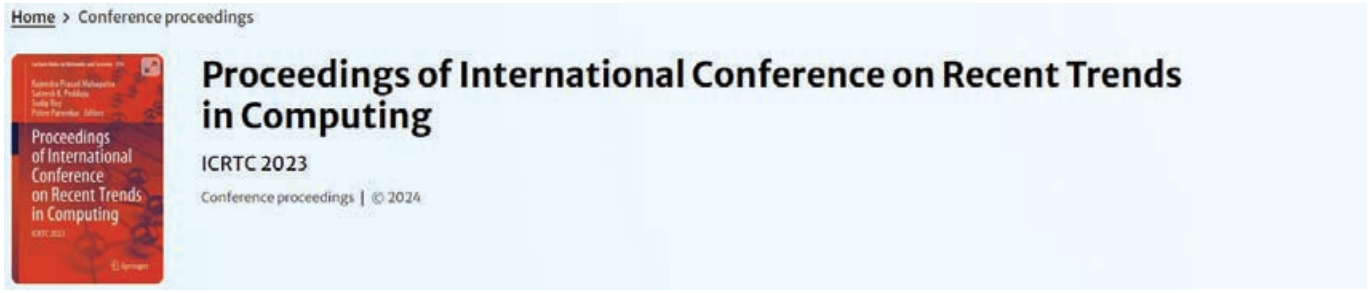

Abstract

Text categorization, a fundamental task in natural language processing (NLP), plays a pivotal role in organizing and managing the ever-expanding volume of textual data across various domains. This research explores the machine learning applications techniques, with a specific emphasis on the Bag-of-Words (BOW) model, to automate the categorization of text documents. The BOW model is a straightforward yet effective representation method that transforms text data into numerical vectors, disregarding the word order and focusing solely on word frequency. BOW approach is to deal with the representation of text that can be used to any sort of the organization of text. This method is based on BOW concept, which measures the material available on Wikipedia, Gmail, Kaggle (https://www.kaggle.com/datasets), and other sites. The suggested approach is employed to create a Vector Space Representation, subsequently employed to educate a Support Vector Machine categorizer. The purpose is to arrange and gather document records from openly accessible datasets through social networking. The textual outcomes exhibit the contrast between the unprocessed data and the purified data exhibited on the word cloud."

Author keywords- And word cloud; Bag-of-words (BoW); Feature extraction; Machine learning; Matlab; Natural language processing; Preprocessing; Support vector machine; Text analytics toolbox; Text categorization; Vector space representation

Indexing/Quartile - Scopus/Q4 | **Percentile** - 20th | **Impact Factor** - 0.38 | SDG 03 GOOD HEALTH AND WELL-BEING

A COMPREHENSIVE REVIEW ON MACHINE LEARNING IN BREAST CANCER ANALYSIS

Ananthanagu U.; Ebin P.M.; Chinnaiyan R.

Lecture Notes in Electrical Engineering Volume 1194, Pages 565 - 5752024 6th International Conference on Recent Innovations in Computing, ICRIC 2023 Jammu 26 October 2023 through 27 October 2023 Code 315599

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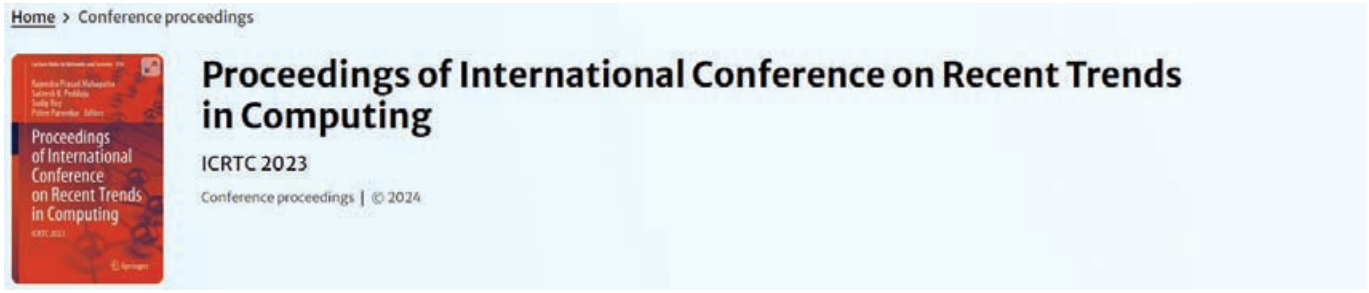

Abstract

One of the most feared illnesses is cancer since it sneaks up on people and you don't know how to fight it. Early and accurate detection are essential for efficient treatment and better patient outcomes for breast cancer, a critical worldwide health concern. For the investigation, Wisconsin Diagnostic Breast Cancer (Diagnostic) (WDBC) dataset was considered from the repository for machine learning at UCI. Medical records pertaining to breast cancer might produce insightful results using Data Mining techniques, such as trends in behavior and frequent/rare item distribution. To determine the best model, the study has been applied to several Machine Learning classification algorithms -SVM, SMO, NB, Attribute Selected Classifier, Decision Strump, J48, using Weka 3.8.3. In all these algorithms, Wrapper-Subset-Evaluation is used to apply feature selection. On the breast cancer data set, it shows that the J48 method performs better than every other classifier.

Author keywords- Association classifiers; Breast cancer; Machine learning; Wrapper-subset-evaluation

Indexing/Quartile - Scopus/Q4 | **Percentile** - 37th | **Impact Factor** - 1.07 | SDG

11 SUSTAINABLE CITIES AND COMMUNITIES

BEST IMAGE PROCESSING FOR HIGHER FACE DETECTION RATE USING HAAR CASCADES

Gupta S.; Singh U.; Rawat M.; **Kurian A.; Mandal L.**; Gupta P.; Sardar T.H.
EAI/Springer Innovations in Communication and Computing Pages 113 – 128 2024
7th EAI International Conference on Robotics and Networks, ROSENET 2023 Istanbul 15 December 2023 through 16 December 2023 Code 317509

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Abstract

This chapter finds the best image processing technique that when implemented on a group photo as a preprocessing increases the number of faces detected using the Haar feature-based face detection algorithm. Group photo is a photograph or a picture or an image where we have several faces. Many times not all the faces are detected when a face detection algorithm is implemented on any group photo. So, to detect more number of faces, the image is preprocessed with different preprocessing techniques and each resultant image is examined. Haar feature-based face detection is implemented on each of the resultant images and checked whether any new face(s) has/have been detected or not compared to the faces detected with just the gray image (the one without preprocessing). In fact, the same preprocessing technique is implemented on a set of 15 images and the number of new faces detected in each image is noted. Finally, the total number of new faces detected on the entire set of images is obtained. The same process is repeated with other preprocessing techniques. The preprocessing technique that gives the highest number of new faces is selected as the best image processing technique that a group photo should undergo prior to the implementation of the Haar feature face detection algorithm.

Author keywords- Detection rate; Face detection; Haar cascades; Haar features; New TPs; Test-images

Indexing/Quartile - Scopus/Q3 | **Percentile** - 16th | **Impact Factor** - NA | SDG 09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

FEATURE ENGINEERING FOR PREDICTING CONSUMER PURCHASE BEHAVIOR: A COMPREHENSIVE ANALYSIS

Karmakar M.; Al Kafi M.A.; Afridi A.S.; Sabbir W.; Raza D.M.

Communications in Computer and Information Science Volume 2093 CCIS, Pages 135 - 1572024 3rd International Conference on Advanced Network Technologies and Intelligent Computing, ANTIC 2023 Varansi 20 December 2023 through 22 December 2023 Code 316879

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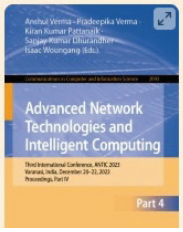


Advanced Network Technologies and Intelligent Computing

Third International Conference, ANTIC 2023, Varanasi, India, December 20–22, 2023, Proceedings, Part IV

Conference proceedings | © 2024

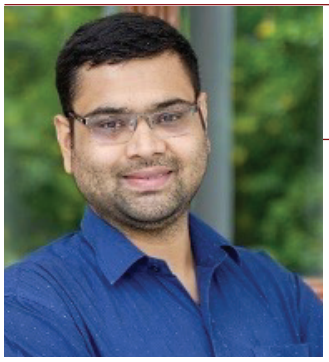
Abstract

Feature engineering is essential for consumer behaviour prediction machine learning models. Analyzing customer behaviour reveals the complexity of feature development. A thorough literature review found that feature engineering has improved consumer purchase behaviour model prediction accuracy in several studies. We use six machine learning algorithms: Random Forest, Decision Trees, K-Nearest Neighbors, Naive Bayes, and Logistic Regression. This study examined Decision Tree, Gradient Boosting Classifier, K-Nearest Neighbors, Random Forest, Logistic Regression, and Gaussian Naive Bayes. The models were trained and evaluated using consumer purchase activity data on demographics, product preferences, online behaviour, and temporal factors. Every model achieved 80% accuracy, with Gradient Boosting Classifier, Random Forest, Decision Tree, and Logistic Regression performing best. Due to careful feature selection and preprocessing, the six machine learning models have similar accuracy and F1 scores. Proper feature engineering techniques affect consumer purchase behaviour, which this study investigates. This paper proposes feature engineering, which is novel. A correlation matrix is more efficient and effective than traditional feature selection methods for selecting relevant features. The accuracy depends on the machine learning method and characteristics used. However, the four models that performed well in our study—Decision Tree accuracy 86%, Gradient Boosting Classifier accuracy 86%, Random Forest accuracy 86%, and Logistic Regression accuracy 86%—are reliable and trustworthy for predicting customer purchasing habits. © The Author(s), under exclusive license to Springer Nature Switzerland AG 2024.

Author keywords- Classification; Consumer purchase behavior; Feature engineering; Machine learning; Prediction

Indexing/Quartile - Scopus/Q4 | **Percentile** - 20th | **Impact Factor** - 0.299 | SDG

11 SUSTAINABLE CITIES AND COMMUNITIES



FORECASTING CRIMINAL ACTIVITY: AN EMPIRICAL APPROACH FOR CRIME RATE PREDICTION

Prabhu B.P.A.; Sharma T.; Taranath N.L.; Dilip K.

Lecture Notes in Electrical Engineering Volume 1194, Pages 225 – 235 2024 6th International Conference on Recent Innovations in Computing, ICRIC 2023 Jammu 26 October 2023 through 27 October 2023 Code 315599

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Abstract

A crime is an act that is prohibited by law and is punishable by a fine, imprisonment, or other legal action. Every day, the news of criminal activity fills our news channels and social media platforms, portraying an image of a society in which crime is an ever-present concern. Crime rate prediction using machine learning is a critical undertaking in today's society to handle the ever-present concern of criminal activities. This paper presents a comprehensive approach to predicting crime rates by leveraging machine learning algorithms and data analysis techniques. The proposed system utilizes historical crime data to develop predictive models that identify high-risk areas and potential future crime trends. The dataset, sourced from the National Crime Rate Bureau (NCRB), undergoes preprocessing, which includes feature engineering and data augmentation. Five distinct models—nearest neighbor, support vector machine, random forest, decision tree, and XGBoost—are assessed for their predictive performance. Among these, the XGBoost Regressor exhibits the highest accuracy in predicting crime rates for 8 distinct crime categories in 19 Indian metropolitan cities. The results indicate a promising accuracy of 93.20% using the selected model, showcasing the potential of machine learning in crime prediction. By targeting resources toward high-risk regions, law enforcement authorities may successfully suppress criminal activity and promote community safety. This study highlights the significance of predictive policing and its role in designing future crime measures.

Author keywords- Analysis; Crime prediction; NCRB; Predictive modeling; XGBoost

Indexing/Quartile - Scopus/Q3 | **Percentile** - NA | **Impact Factor** - 5.81 | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

OPTIMIZING SENSOR LOCALIZATION AND CLUSTER PERFORMANCE IN WIRELESS SENSOR NETWORKS THROUGH INTERNET OF THING (IOT) AND BOOSTED WEIGHT CENTROID ALGORITHM

Krishna K.N.; Chebrolu S.K.; Manikandan R.; **Thomas A.K.**; Anusha P.V.; Bhupathi H.P.
Journal of Intelligent Systems and Internet of Things Volume 13, Issue 2, Pages 223 – 230
2024

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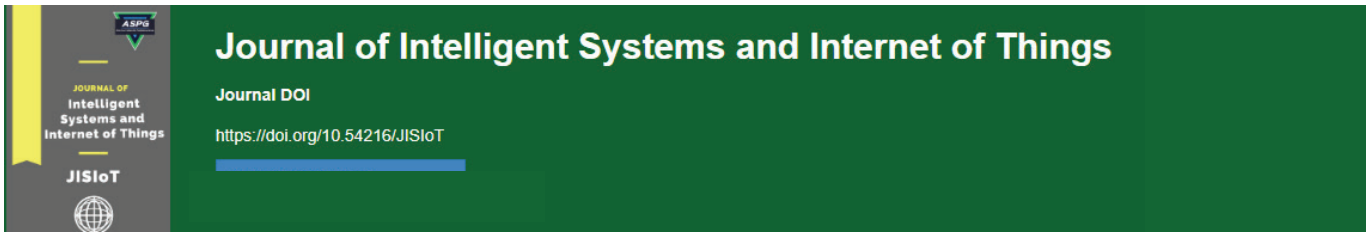

Abstract

Localization is an extremely important component of applications that make use of wireless sensor networks. It has a substantial impact on academics as well as real-time sensor deployment applications in the aim of lowering the amount of energy that is used while simultaneously locating unknown nodes. The process of obtaining the coordinates along an axis that represent the locations of the sensor nodes is referred to as localization. The accuracy of locating the positions of the nodes varies depending on the environmental conditions, the type of nodes, the type of application, and the type of localization methods used. A standard localization method known as distance vector hop (DV-hop) localization will be able to determine the positions of unknown nodes with typical accuracy with the assistance of beacon nodes based on Internet of things. The DV-hop and improved weighted centroid localization algorithms, in addition to the suggested boosted weight centroid-based localization approach, are both addressed in this article. The suggested boosted weight centroid localization technique is utilized to find nodes in the remote area of the WSN while conserving energy. This is accomplished with the assistance of measurements involving both the nodes and the centroid. The modified weight metric is utilized in the process of carrying out the task of localisation of an unknown node. The performance of BWCLA is evaluated based on a number of different metrics, including accuracy in localization, average localization error, total packets utilized, and energy usage.

Author keywords- Boosted weight centroid algorithm; DV-hop; IoT; Localization; WSN

Indexing/Quartile - Scopus/NA | **Percentile** - NA | **Impact Factor** - NA | SDG

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

17 PARTNERSHIPS FOR THE GOALS

OCIMUM SANCTUM LINN PLANT GROWTH MONITORING AND IRRIGATION SYSTEM

Darwin Raj A.; **Ramalakshmi K.**; Venkatesan R.; Sundar G.N.; Nancy G.; Shirly S. *Proceedings - 2024 4th International Conference on Pervasive Computing and Social Networking, ICPCSN 2024 Pages 919 – 925 2024 4th International Conference on Pervasive Computing and Social Networking, ICPCSN 2024 Salem 3 May 2024 through 4 May 2024 Code 201477*

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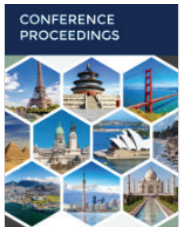

2024 4th International Conference on Pervasive Computing and Social Networking (ICPCSN)
May 3 2024 to May 4 2024
Salem, India
ISBN: 979-8-3503-8634-9

Abstract

Nowadays, the global challenge of ensuring food security for a growing population necessitates innovative solutions in agriculture. The convergence of Internet of Things (IoT) and Artificial Intelligence (AI) technologies presents a promising avenue for addressing key issues such as crop disease management and resource optimization. In that project proposes a holistic approach to smart agriculture by integrating IoT-based sensor systems for real-time monitoring of key agricultural parameters with AI-powered disease detection and severity estimation techniques. Leveraging advanced sensor technologies, including soil moisture, float level, pH, and humidity sensors, the proposed system collects real-time data from agricultural lands and transmits it to a cloud-based platform. Additionally, a deep learning-based Convolutional Neural Network (CNN) model is employed to detect and classify crop diseases from images captured in the field. The system further estimates disease severity by analyzing affected and unaffected leaf regions, enabling targeted treatment with appropriate pesticide concentrations. By combining IoT sensor data with AI-driven disease management. The integrated system offers a comprehensive solution for precision agriculture. Through early disease detection, optimized resource usage, and timely intervention, the proposed system aims to enhance crop yield, minimize wastage, and contribute towards global food security goals.

Author keywords- Disease prediction; Growth monitoring; Humidity management; pH detection


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