DEPARTMENT OF COMPUTER APPLICATION

INSPIRING EXCELLENCE

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RESEARCH BULLETIN

It is with great pleasure that we present the *Research Bulletin 2024* of the **Department of Computer Application, Integral University.** This bulletin serves as a comprehensive summary of the research contributions made by our faculty members and scholars over the year. The field of Computer Applications continues to evolve rapidly, driven by advancements in artificial intelligence, cybersecurity, data science, and emerging technologies. Our department remains committed to fostering a culture of research and innovation, reflected in the diverse range of publications featured in this edition. These research endeavors contribute to academic excellence and address real-world challenges, reinforcing our commitment to technological advancement and societal impact.

We extend our sincere appreciation to all researchers whose dedication and hard work have enriched this bulletin. We also express our gratitude to the university leadership for their continuous support in promoting research and development. We hope this compilation will serve as a source of inspiration for future research initiatives and collaborations.

Warm regards,
Dr. Mohammad Faisal
Professor & Head
Department of Computer Application

Research Articles

Hybrid Bat and Salp Swarm Algorithm for Feature Selection and Classification of Crisis-Related Tweets in Social Networks

Asif Khan et al.

Twitter is a useful tool for effectively tracking and managing crisis-related incidents. However, due to many irrelevant features in textual data, the problem of high dimensionality arises, which eventually increases the computational cost and decreases classification performance. This work presents a Spark-based hybrid binary Bat (BBA) and binary Salp swarm algorithm (BSSA) named SBBASSA for feature selection and classification of crisis-related tweets.

Read more

DLCD: Deep Learning-Based Change Detection Approach to Monitor Deforestation

Saurabh Srivastava & Tasneem Ahmed

Deforestation monitoring is an important input for forest management that helps to prepare an action plan, but monitoring is still a challenging task. Hence, there is a need for an accurate deforestation mechanism to monitor those areas that have been converted from forest to non-forest areas. This work presents a deep learning-based forest monitoring approach to detect the changes occurred during 2017–2022 of the Kukrail forest range situated in India.

Read more

Proposed Algorithm and Models for Sentiment Analysis and Opinion Mining Using Web Data

Nadiya Parveen & Mohd Waris Khan

(Nanotechnology Perceptions, Volume 20, No.6, 2024)

Sentiment analysis and opinion mining are quite helpful when it comes to automated textual corpus analysis, which includes tweets, reviews, comments, and other similar content. This study constructs an algorithm to evaluate model accuracy and the impact of pre-processing techniques, such as stemming and stop-word removal. The proposed model is adaptable for data from platforms like Facebook and Twitter, enhancing sentiment monitoring and opinion mining across diverse platforms.

Read more

Model-Based Recognition in Robot Vision for Monitoring Built Environments

Asif Khan et al.

(Multimedia Tools and Applications, 2024)

Robotic visual perception, video surveillance, exception handling, intelligent early warning, mass rapid retrieval, efficient image storage, cameras, and other fields can all benefit from its widespread application. Humans can correctly respond to complex scenes and perceive them easily, but this is currently a challenging issue for robot visual understanding. This work presents a comparative analysis and studies of some state-of-the-art object-recognition models for robot vision-based problems. The findings provide insights into advancing robot vision systems, improving efficiency in dynamic environments, and enhancing object recognition accuracy in industrial applications.

Read more
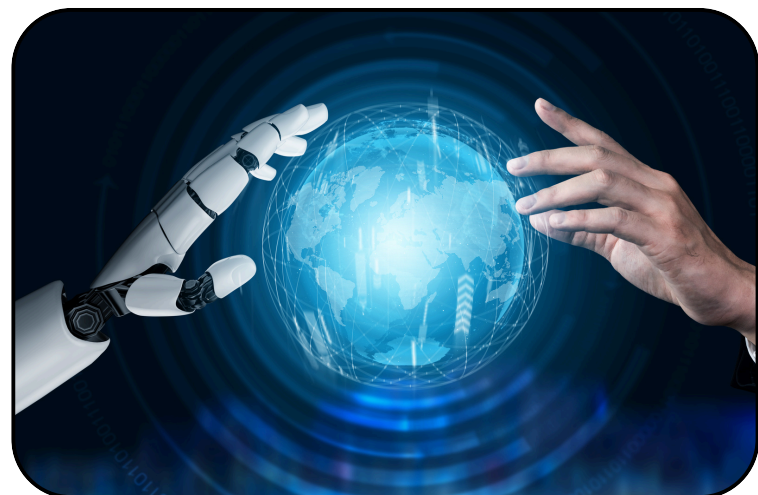
An Efficacy Comparison of Supervised Machine Learning Classifiers for Cyberbullying Detection and Prediction

Nashra Javed, Mohammad Faisal & Tasneem Ahmed

Cyberbullying incidents are increasing rapidly in online social networking sites (SNS), and there is a growing demand for robust detection and prediction mechanisms to foster a safer digital environment. This paper investigates the performance of several supervised machine learning (ML) classifiers in terms of sentiment analysis and text categorization related to cyberbullying.

Read more
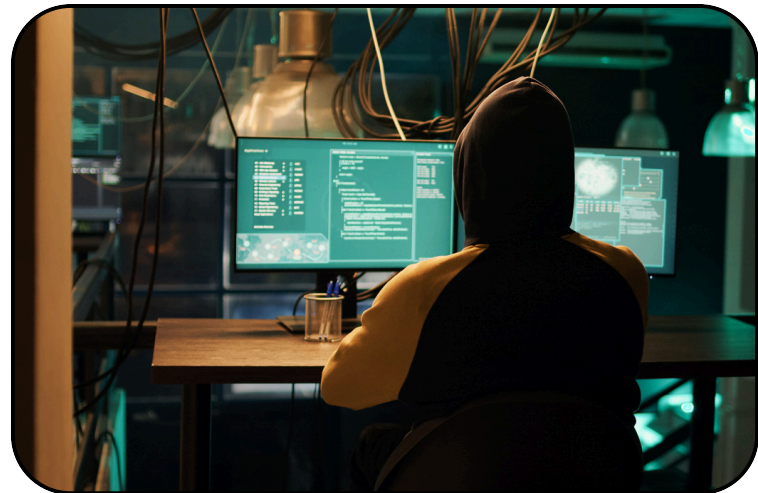
Role of AI and Blockchain in Patient Health Care

Motashim Rasool, Uvais Ahmad, Vishal Agarwal & Saumya Singh

Patient data is a crucial asset in the healthcare sector, encompassing medical history, diagnoses, treatments, outcomes, and personal demographic details. However, challenges such as data fragmentation, breaches, misuse, quality issues, and privacy concerns threaten the security, trustworthiness, and accessibility of patient data, impacting patient well-being. This work highlights how blockchain ensures secure, transparent data storage, while AI enhances data analysis and decision-making.

Read more

Automatic Brain Tumor Detection MR Images

Saumya Singh, Sumit Yadav & Motashim Rasool

B rain tumours are the most common malignancies disease and accurate detection of brain tumors, particularly in individuals under 20, is essential for early diagnosis. This study proposes a four-stage process for enhancing detection using MRI scans to improve tumor differentiation and segmentation, increasing diagnostic accuracy and efficiency in brain tumor detection.
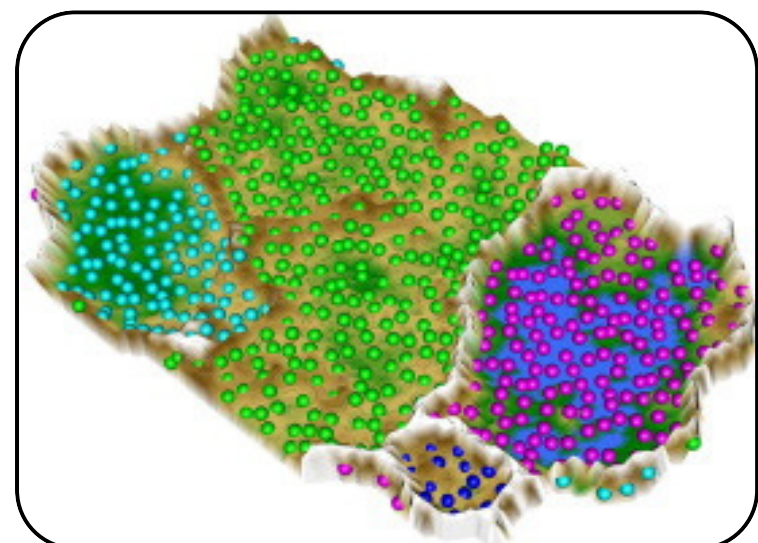
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K-Means Hybridization with Enhanced Firefly Algorithm for High-Dimension Automatic Clustering

Afroj Alam & Muhammad Kalamuddin Ahamad

C lustering is an important, influential, and unsupervised machine-learning technique for naturally grouping objects into groups according to their similarity. This work combines Principal Component Analysis (PCA) with the Silhouette and Elbow methods to enhance clustering accuracy and explores meta-heuristic swarm intelligence algorithms for automatic data clustering. The proposed model addresses convergence issues and local minima.
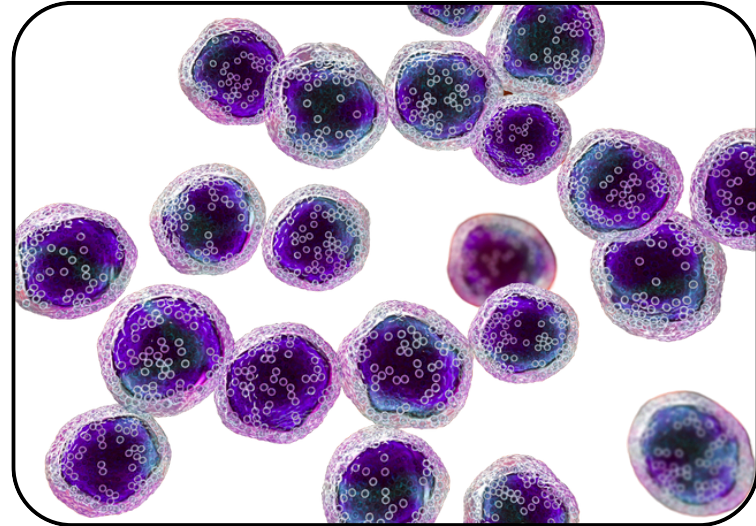
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Architecting Lymphoma Fusion: PROMETHEE-II Guided Optimization of Combination Therapeutic Synergy

Mohd Waris Khan et al.

Lymphoma is one of the prime concerns in health care across the world nowadays. The traditional, mono-therapeutic interventions using chemotherapeutic agents and radiation showed limitations in relation to disease control, suboptimal response, and development of intractable drug resistance. This study thus opens the reasons for combination therapies in detail by explaining the intrinsic rationale and revealing the intrinsic advantages of lymphoma treatment with an initiative underpinned by scrupulous analysis.
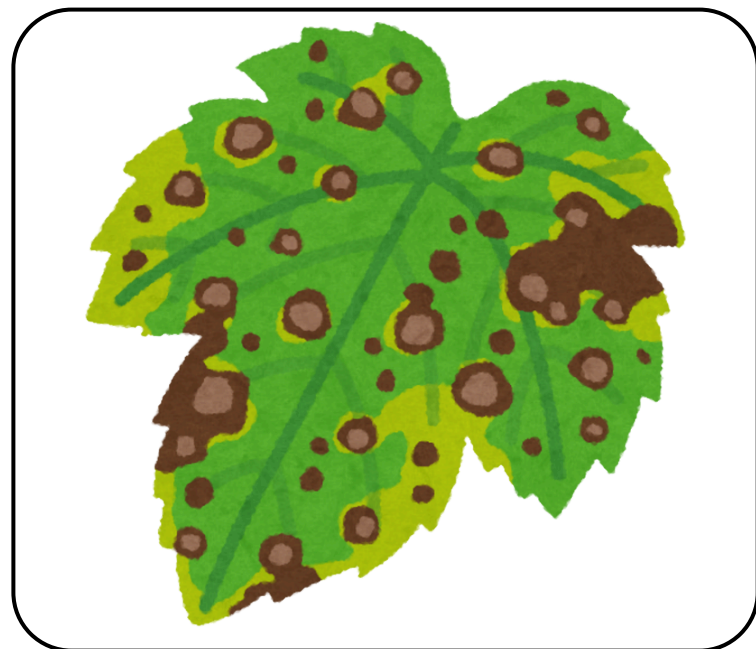
Read more

Review on Leaf Disease Detection Using Image Processing Techniques

Saumya Singh, Sumit Yadav & Motashim Rasool

Agriculture is vital to India's economy, with technological advancements enhancing crop production. This study focuses on plant disease recognition using image processing techniques for sustainable agriculture. By analyzing leaf images, it detects diseases through segmentation, feature extraction, and classification. Various foliar disease detection technologies are reviewed, highlighting key challenges. Comparing existing approaches, it emphasizes the importance of accurate disease identification to prevent agricultural losses and improve productivity.

Read more

A Decision Tree Approach for Enhancing Real-Time Response in Exigent Healthcare Unit Using Edge Computing

Eram Fatima Siddiqui & Tasneem Ahmed

Heathcare services aim to provide high-quality, real-time treatment with patient-centric support. This study enhances IoT-based healthcare using machine learning and bio-sensors to improve diagnosis and decision-making. A Decision Tree method classifies patients into risk categories, leveraging Mobile Edge Computing for real-time processing. Task offloading optimizes urgent care. The proposed approach outperforms existing methods, achieving an 88% improvement in system performance, ensuring timely and efficient patient treatment.

Read more

Machine Learning-Driven Implementation of Workflow Optimization in Cloud Computing for IOT Applications

Md Khalid Jamal & Mohammad Faisal

The Internet of Things (IoT) enables interconnected devices to communicate and process data in real time, but efficient workflow scheduling remains a challenge due to dynamic network conditions and data variability. Automated Machine Learning (AutoML) enhances IoT applications by automating model selection, training, and tuning. This study integrates AutoML with cloud computing to optimize scheduling, improving accuracy by 25%, reducing computational overhead by 30%, and enhancing adaptability by 40% in large-scale IoT deployments.

Read more

Deep Learning Approach for Classifying DDoS Attack Traffic in SDN Environments

Shweta Dwivedi, Rizwan Akhtar, Shameem Ahmad Ansari & Saumya Singh

Deep learning enhances cybersecurity by identifying complex patterns in network traffic, making it effective for detecting Distributed Denial of Service (DDoS) attacks that overwhelm systems with malicious requests. This study classifies DDoS attacks in Software-Defined Networking (SDN) environments using a neural network classifier that analyzes traffic flow features. Evaluated with the CICIDS 2024 dataset, the model outperforms traditional techniques, improving accuracy, precision, and resilience against imbalanced datasets for robust SDN security.

Read more

An LSTM-Based Novel Near-Real-Time Multiclass Network Intrusion Detection System for Complex Cloud Environments

Minhaj Khan et al.

Intrusion detection systems (IDS) are essential for identifying malicious activities in complex cloud environments, where dynamic and large-scale data flows pose security challenges. This study proposes a long short-term memory (LSTM)-based near real-time multiclass network intrusion detection system (NIDS) using the CSE-CICIDSS2018 dataset. By integrating a random forest for feature selection, the model achieves 99.66% accuracy with minimal loss, enhancing intrusion detection precision in cloud security frameworks.

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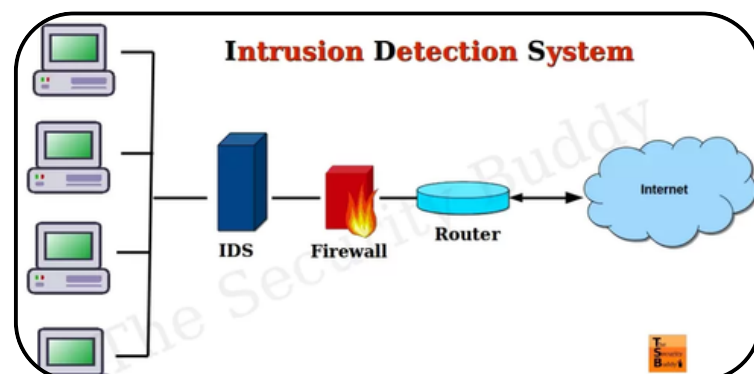
Ensuring Security in Electronic Health Records: Implementing and Validating a Blockchain and IPFS Framework

Abida Khanam & Mohd Faizan Farooqui

(Journal of Electrical Systems, Vol. 20, No. 07, 2024)

Blockchain technology offers a decentralized and immutable approach to securing sensitive data, making it highly suitable for Electronic Health Records (EHR). EHR systems facilitate efficient data storage, retrieval, and sharing among healthcare providers, but ensuring their security remains a challenge. This study presents a blockchain and InterPlanetary File System (IPFS)-based framework to enhance EHR security, leveraging blockchain's integrity and IPFS's distributed storage to ensure data protection, privacy, and interoperability in healthcare systems.


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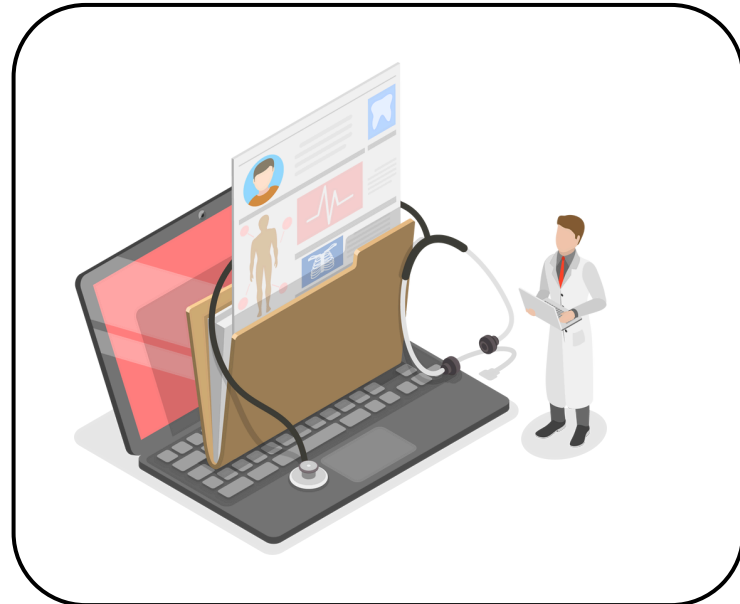
A Deep Learning-based Approach to Predict the Flood Patterns Using Sentinel-1A Time Series Images

Mohammed Siddique & Tasneem Ahmed et al.

(Journal of the Indian Society of Remote Sensing, Vol. 52, 2024)

Deep learning techniques offer advanced predictive capabilities for analyzing flood patterns using satellite imagery. Flood monitoring benefits from synthetic aperture radar (SAR) images, which provide high-resolution data regardless of weather conditions. This study utilizes Sentinel-1A time-series images to analyze flood trends in Ayodhya and Basti, India. Comparing Conv1D and naïve forecast models, results show Conv1D achieves superior accuracy, aiding authorities in flood assessment and decision-making.


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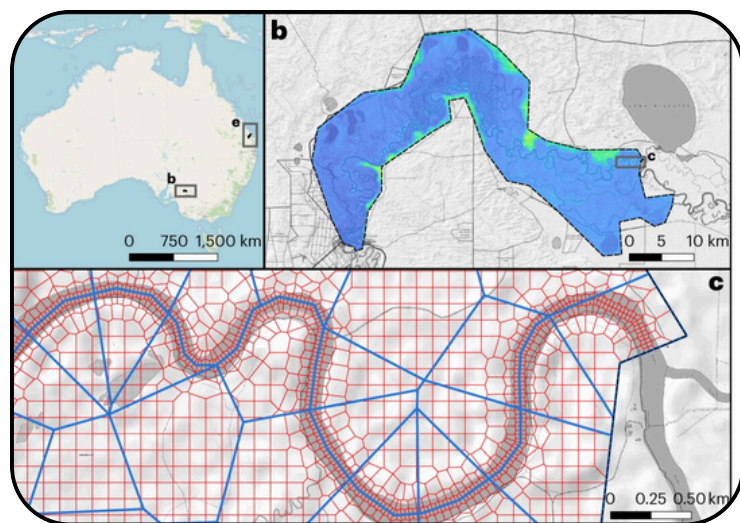
Ensemble Random Forest and Deep Convolutional Neural Networks in Detecting and Classifying The Multiple Intrusions from Near Real-Time Cloud Datasets

Minhaj Khan & Mohd. Haroon

(Security and Privacy, Vol. 7, No. 5, 2024)

Neural networks play a crucial role in processing real-time cloud datasets for cybersecurity applications. Real-time detection of cyber threats requires high-speed analysis of complex, high-volume data. This study integrates deep convolutional neural networks (CNN) and ensemble learning with random forests to enhance intrusion detection. Using the CSE-CICIDS2018 dataset, the proposed models achieve high accuracy, ensuring robust cloud data security and effective real-time threat classification.

Read more
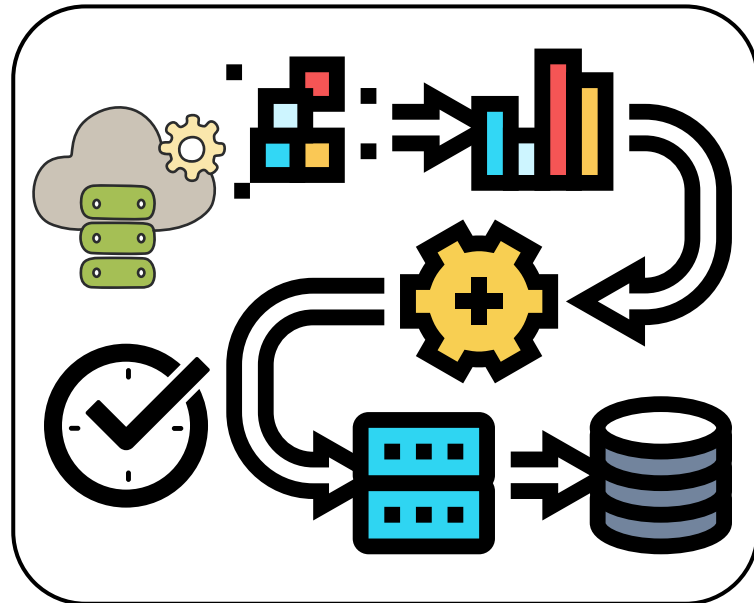
An Approach to Develop a Model to Detect the Phosphorus and Potassium Deficiency in Paddy Crop on Agriculture Farm Using DIP & ML

Mohammad Arif Ali Usmani & Ausaf Ahmad

(Fusion: Practice and Applications, Vol. 18, No. 1, 2024)

Digital Image Processing (DIP) and Machine Learning (ML) play a key role in optimizing fertilizer use by analyzing rice leaf color to estimate nutrient levels. This study integrates DIP for real-time leaf analysis and ML models to expand the Leaf Colour Chart (LCC) database, enabling accurate nitrogen, phosphorus, and potassium assessment. The approach improves fertilizer efficiency, reduces costs, and enhances rice yield, contributing to sustainable agricultural practices.

Read more

Transformative Role of Machine Learning In Design Optimization of Reinforced Concrete Frames

Tasneem Ahmed et al.

Machine learning (ML) enhances the optimization of reinforced concrete (RC) frames by improving structural performance, reducing costs, and promoting sustainability. This study explores ML applications in RC design optimization, focusing on material characterization, optimization algorithms, sensitivity analysis, predictive modeling, structural health monitoring, and compliance with design codes. The approach highlights ML's role in streamlining construction, conserving resources, and advancing data-driven design for more efficient and safe RC structures.

Read more
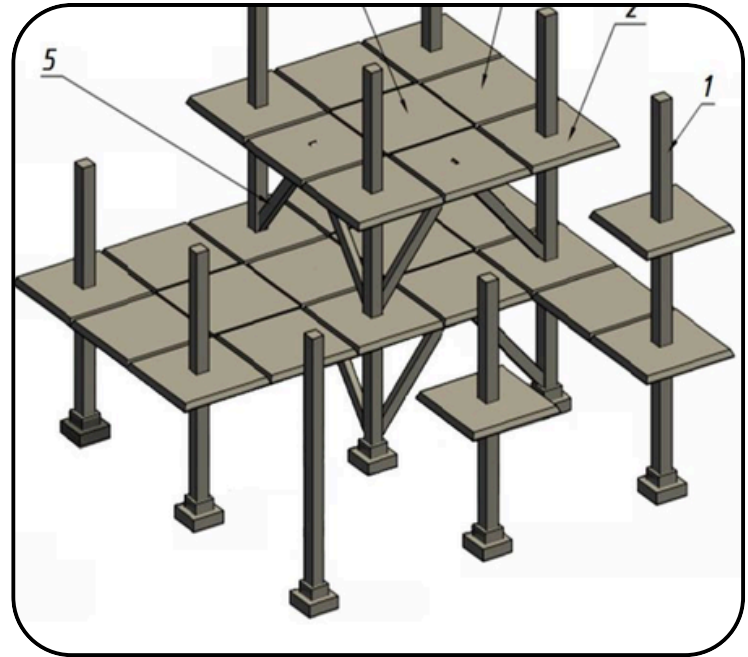
GTBTL-IoT: An Approach of Curtailing Task Offloading Time for Improved Responsiveness in IoT-MEC Model

Eram Fatima Siddiqui & Tasneem Ahmed

The Internet of Things (IoT) enhances real-time data collection and automation but faces challenges like limited power, resources, and processing speed. To address these, Mobile Edge Computing (MEC) brings cloud-like services closer to IoT devices, reducing latency and improving response times. This study introduces the Game Theory-Based Task Latency (GTBTL-IoT) algorithm, optimizing task offloading by leveraging Game Matching and Data Partitioning theories, significantly reducing transmission and computation latency for efficient IoT-MEC operations

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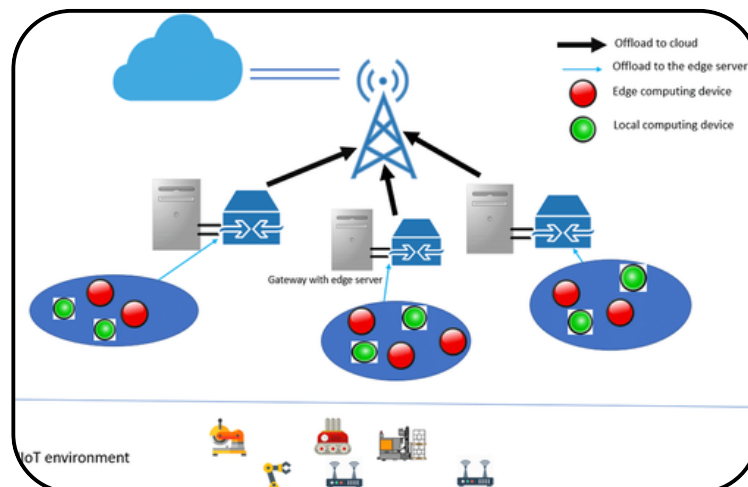
Development of A Robust Parallel And Multi-Composite Machine Learning Model For Improved Diagnosis Of Alzheimer's Disease: Correlation With Dementia-Associated Drug Usage And AT(N) Protein Biomarkers

Afreen Khan et al.

(Frontiers in Neuroscience, Vol. 18, 2024)

Alzheimer's disease (AD) is a progressive neurodegenerative disorder that affects memory, cognition, and daily functioning. Early diagnosis is crucial for effective intervention, yet traditional methods face challenges in accuracy. This study leverages machine learning (ML) and statistical modeling to enhance AD detection using neuropsychological, genetic, and biomarker data. A hybrid-clinical model integrating drug usage and protein biomarkers achieves a 97.60% accuracy, demonstrating the potential of AI-driven approaches for precise AD diagnosis.


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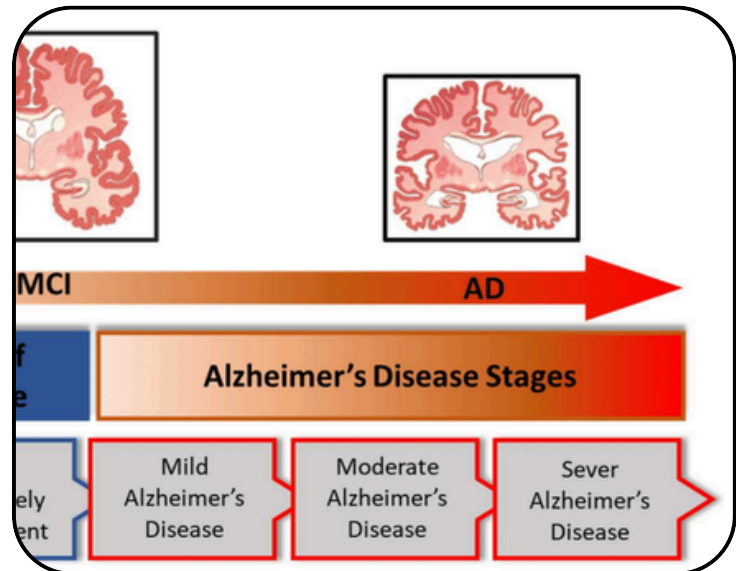
StrucPy.RCFA- Object-Oriented Python Package for Structural Analysis of Reinforced Concrete Frames

Tasneem Ahmed et al.

(Journal of Open Research Software, Vol 12, No. 1, 2024)

Object-oriented Python packages streamline complex computations by encapsulating data and functions within modular structures. This study explores StrucPy.RCFA, an open-source package for analyzing reinforced concrete (RC) structures, aiding civil engineering students and researchers. By offering visualization of 2D/3D RC frames with minimal coding, it eliminates dependency on commercial software. Its auto-generation features and user-friendly design enhance accessibility, supporting skill development and sustainable education (SDG4) in structural engineering.
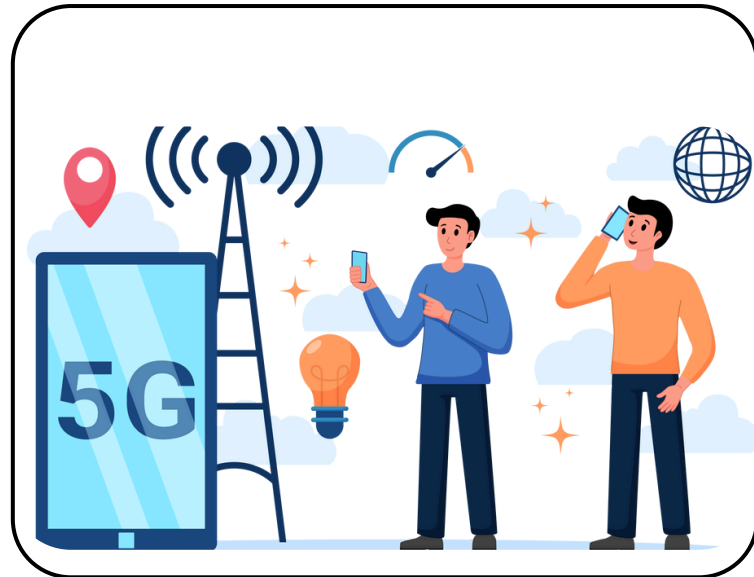

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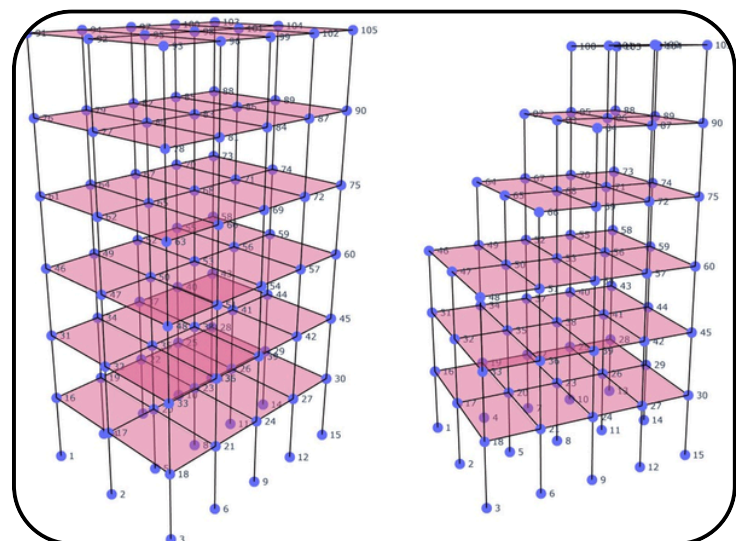
Design of Data Processing Scheme of 5G Terminal Protocol Conformance Test System

Asif Khan et al.

(IEEE Xplore, 2024)

5G technology revolutionizes mobile communication with high speed, low latency, and massive connectivity. Ensuring interoperability among various manufacturers' 5G terminal equipment requires a robust conformance test system. This study focuses on a 5G terminal protocol conformance test system, comprising a main control module for user interaction and a protocol stack simulation module for high-level protocol execution. The system effectively detects internal errors by analyzing signaling data, ensuring seamless 5G deployment

Read more

A One-Time Encryption Consensus Algorithm Based on (t, n) Threshold Secret Sharing

Asif Khan et al.

(IEEE Xplore, 2024)

A one-time encryption consensus algorithm using $(t,n)(t, n)(t,n)$ threshold secret sharing enhances blockchain security and performance. Based on chaos algorithms, finite state automata, secure multi-party computation, and the Lagrange interpolating formula, this study ensures resistance to various attacks while achieving a high encryption security level. The approach features key dynamism and flexible node management, reinforcing the reliability and security of blockchain consensus mechanisms.
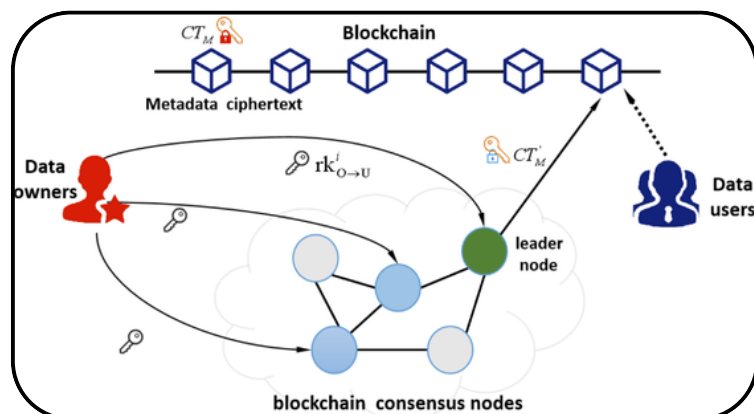
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Detection of Rheumatoid Arthritis Using CNN by Transfer Learning

Afroj Alam & Muhammad Kalamuddin Ahamad

(Artificial Intelligence and Autoimmune Diseases, 2024)

R heumatoid arthritis (RA) is a chronic autoimmune disorder causing joint inflammation and structural damage. Early detection is crucial to prevent irreversible harm. This study introduces a Convolutional Neural Network (CNN) with transfer learning to analyze X-ray images for RA diagnosis. By leveraging pre-trained models, the system effectively distinguishes RA-affected joints from healthy ones, even with limited data. The approach enhances diagnostic accuracy, supporting non-invasive RA detection and improving clinical decision-making.
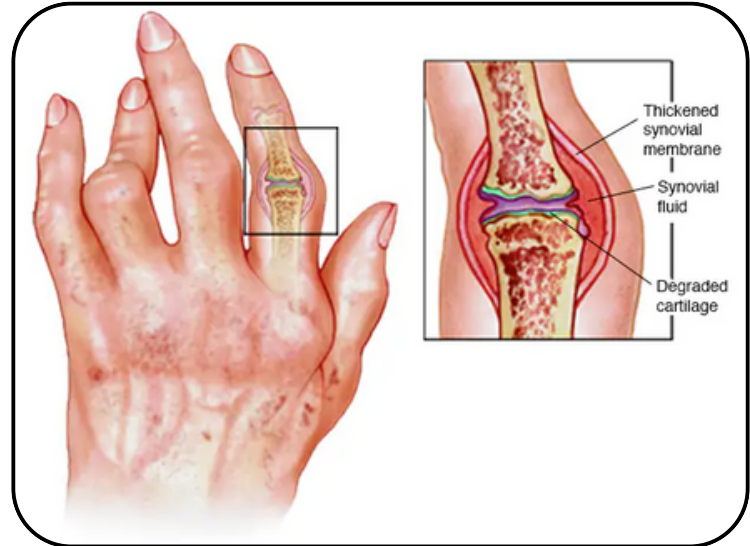
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Analyzing Strategies Employed in Disseminating Deceptive Content on Social Media

Priya Sharma & Mohd Waris Khan

(Emerging Trends in IoT and Computing Technologies, 2024)

S ocial media has become integral to modern communication, yet sole reliance on it poses risks, particularly in spreading fake news—including misinformation, disinformation, and mal-information. Platforms like WhatsApp, Facebook, and YouTube facilitate rapid dissemination, with some users unknowingly spreading falsehoods while others do so intentionally for political or commercial gain. This study explores the motives behind misinformation, emphasizing the need for awareness to mitigate its impact in the digital landscape.
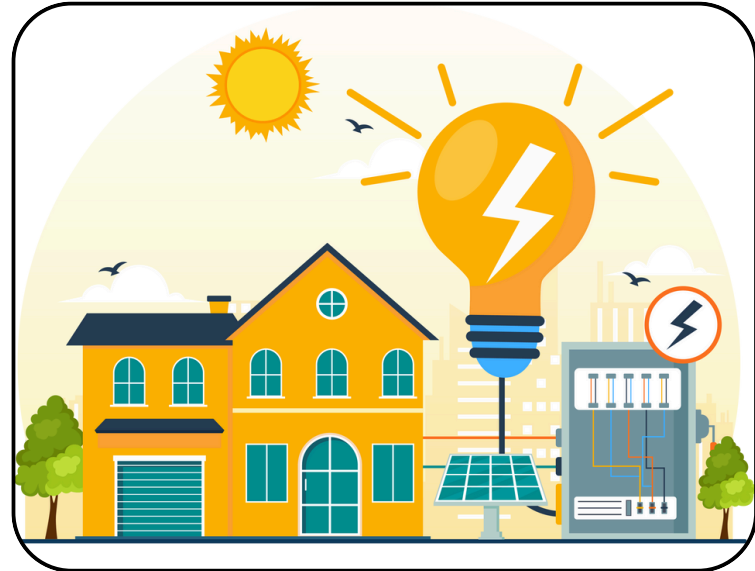
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Machine Learning Application for Solar PV Forecasting

Asif Khan et al.

(Photovoltaic Systems Technology, 2024)

Solar PV power forecasting enhances grid stability by predicting future power generation, aiding control engineers and optimizing hydropower dispatch. Given the intermittent nature of renewable energy sources like solar and wind, machine learning (ML) algorithms excel in time series forecasting using weather data as inputs. This study evaluates various ML models in Indian solar parks, comparing them with the Smart Persistence (SP) method, demonstrating ML's superior predictive accuracy.

Read more

The Rising Threat of Deepfake Technology and Frightening Advancements of Social Engineering

Gausiya Yasmeen, Syed Adnan Afaq & Tasneem Ahmed

(Effective Strategies for Combatting Social Engineering in Cybersecurity, 2024)

Deepfake technology, which manipulates images and videos using deep learning, poses significant risks to privacy, security, and misinformation. Combined with social engineering (SE) attacks, deepfakes bypass security measures, threatening politics, businesses, and individuals. This study examines deepfake applications, risks, and detection methods, emphasizing legislative, regulatory, and technological countermeasures. Solutions include deepfake detection tools, content authentication, and education to mitigate the dangers of synthetic media in various domains.

Read more

Zea Mays Leaf Disease Classification Using Swin Transformer

Asif Khan et al.

(Advances in Intelligent Systems and Computing, 2024)

Deep learning (DL) methods enhance the detection and classification of Zea mays (corn) leaf diseases, mitigating agricultural losses. Traditional disease identification relies on visual inspection, which may be inaccurate. This study employs Swin Transformer (Swin-T), a recent advancement in image classification, to identify blight, common rust, and gray leaf spot. With a 95.9% accuracy rate, Swin-T outperforms existing methods, offering farmers a precise and efficient diagnostic tool.

Read more

Intelligent Modeling and Estimation of Solar Radiation Data Using Artificial Intelligence

Asif Khan et al.

(Photovoltaic Systems Technology, 2024)

Artificial Intelligence (AI) in photovoltaic (PV) forecasting enhances solar power predictions, particularly in remote areas lacking monitoring equipment. This study explores AI-driven simulation models for PV forecasting, emphasizing AI's role in optimizing solar radiation data prediction. AI-based methods significantly improve PV system performance and sizing by accurately forecasting solar parameters. The findings highlight AI's potential as a design tool for efficient and intelligent solar energy management.

Read more

Brain Tumor Detection from Magnetic Resonance Imaging Images using Shallow Convolutional Neural Network

Asif Khan et al.

(Deep Learning Applications in Translational Bioinformatics, 2024)

Brain tumor is an abnormal growth of malignant cells within the brain, potentially disrupting normal neurological functions. MRI scans are commonly used to diagnose and monitor these tumors by providing detailed images of abnormal tissue development. Convolutional Neural Networks (CNNs) play a crucial role in detecting brain tumors from MRI scans, leveraging deep learning to enhance accuracy. This study explores a CNN-based deep transfer learning approach for efficient tumor detection.

Read more

Exploring the Future Landscape: Emerging Trends in Social Engineering Defense

Shweta Dwivedi

(Effective Strategies for Combatting Social Engineering in Cybersecurity, 2024)

Social engineering is a cyber threat that exploits human psychology rather than technical vulnerabilities to gain unauthorized access to information or systems. This study explores emerging defenses, analyzing attack vectors like phishing, pretexting, baiting, and tailgating. AI-driven real-time detection, zero-trust architecture, and regulatory frameworks are key trends in mitigating these threats. As attack methods evolve, integrating technological, organizational, and governmental strategies is essential for robust protection against social engineering tactics.
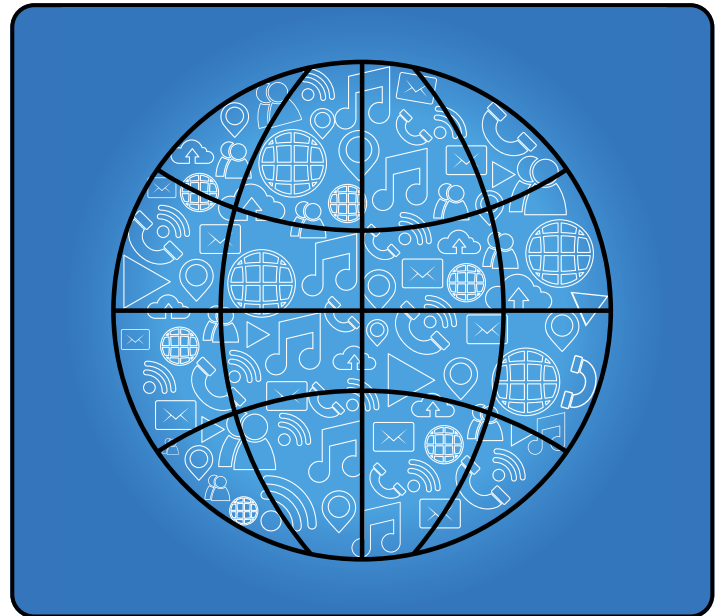

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Social Media Revolution: Unravelling the Threads of Connectivity and Influence

Syed Adnan Afaq, Shweta Dwivedi & Mohammad Faisal

(Human Impact on Security and Privacy: Network and Human Security, Social Media, and Devices, 2024)

Social media has revolutionized communication, transcending borders while introducing challenges like privacy breaches and misinformation. This study explores its transformative impact on society, from driving social movements to reshaping marketing and research collaboration. Its influence extends to agriculture and bioinformatics, fostering innovation. Emerging technologies like AR, VR, and AI will further shape its evolution, integrating analytics to address global challenges and enhance connectivity.
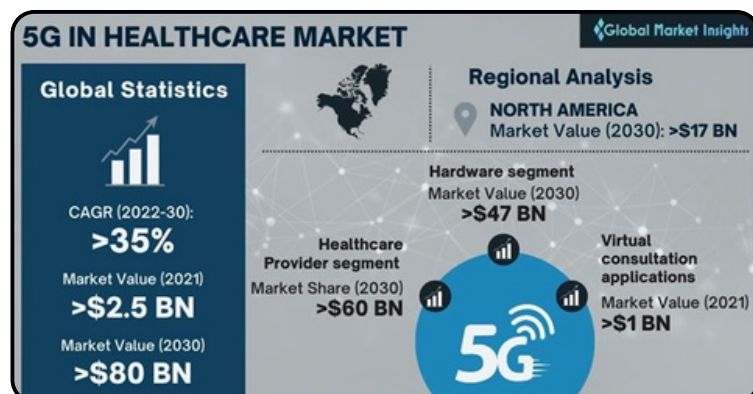
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The Impact of 5G on the Future Development of the Healthcare Industry

Syed Adnan Afaq, Mohammad Faisal & Tasneem Ahmed

(The Ethical Frontier of AI and Data Analysis, 2024)

5G and E-health are transforming healthcare with real-time remote monitoring, high-speed data transfer, and IoT-based diagnostics. This study explores how 5G enables advanced medical applications, enhancing patient care through AI-driven analysis and wearable sensors. However, security concerns arise as patient data stored on application servers become targets for cyberattacks. Strengthening IoT security is crucial to ensuring data privacy and reliability in the expanding digital healthcare ecosystem.

Read more

Cyber Threats in Agriculture and the Food Industry: An Indian Perspective

Saurabh Srivastava & Tasneem Ahmed et al.

(Advances in Cyberology and the Advent of the Next-Gen Information Revolution, 2024)

Cyber Threats in Agriculture and the Food Industry are rising as digital technologies become integral to farming and food supply chains. This study explores how cyber threats like ransomware and denial-of-service attacks target agricultural systems, disrupting operations and endangering food security. Addressing cybersecurity challenges is crucial for safeguarding digital agriculture. Strategies include implementing robust cybersecurity measures, enhancing awareness, and securing IoT-based farming technologies to ensure a resilient food supply.

Read more

Securing the Weakest Link: Compressive Approaches to Social Engineering Attack Prevention

Farooq Ahmad & Bably Dolly

(Effective Strategies for Combatting Social Engineering in Cybersecurity, 2024)

Social Engineering Attack Prevention is critical in safeguarding digital security as attackers exploit human vulnerabilities through tactics like phishing, vishing, and pretexting. This study highlights how a lack of awareness makes individuals the weakest link in cybersecurity. Strategies such as awareness training, behavioural interventions, and frameworks with human security sensors help mitigate risks. Strengthening user-focused defences and adopting preventive models can enhance resilience against evolving social engineering threats.

Read more

Pivotal Role of Cyber Security in Internet of Things-based Smart Cities

Tasneem Ahmed et al.

(Computational Intelligence Applications in Cyber Security, 2024)

Internet of Things Security in Smart Cities is essential as connected technologies improve urban operations but also introduce cybersecurity risks. This study explores how IoT enhances smart city functions like traffic control and surveillance while facing growing cyber threats. A two-way security model is proposed to safeguard IoT applications, ensuring user data protection by storing only necessary information. Strengthening security mechanisms is crucial for sustaining the future of smart cities.

Read more

Block-Chain Technology-Based Framework to Build Cyber-Secured Smart Cities

Nashra Javed, Tasneem Ahmed & Mohammad Faisal

(Intelligent Networks, 2024)

Blockchain in Smart Cities enhances security and resilience by addressing privacy breaches and cyber threats in IoT-based urban services. This study explores how blockchain ensures secure, decentralized data storage for applications like smart transport and waste management. While blockchain strengthens cloud security, challenges such as scalability, energy efficiency, and interoperability must be addressed. A hybrid intelligent security system is essential for balancing innovation with robust urban cybersecurity.

Read more

Using Asynchronous Frameworks and Database Connection Pools to Enhance Web Application Performance in High-Concurrency Environments

Asif Khan et al.

The rapid expansion of web applications necessitates efficient handling of high-concurrency scenarios. Asynchronous frameworks, such as Springer WebFlux, improve request handling through non-blocking operations, while database connection pools optimize resource utilization by minimizing connection overhead. This study explores their combined impact, demonstrating lower response times, higher throughput, and improved stability. The developed model outperforms synchronous systems and standalone asynchronous models, offering practical insights for enhancing web application performance and user experience.

With Connection Pool

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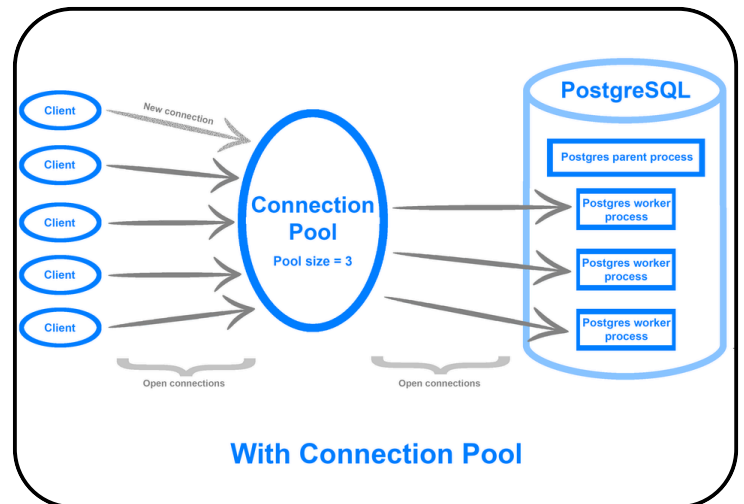
Research on Improved Quick Sort Algorithm with Duplicate Value Handling

Asif Khan et al.

An improved Quick Sort algorithm addresses the challenge of duplicate values in data sorting by implementing specialized processing. This study reduces the number of divisions and recursive calls, significantly enhancing efficiency. Experimental results demonstrate over a 50% improvement in time efficiency for large datasets compared to traditional Quick Sort, without compromising space efficiency.
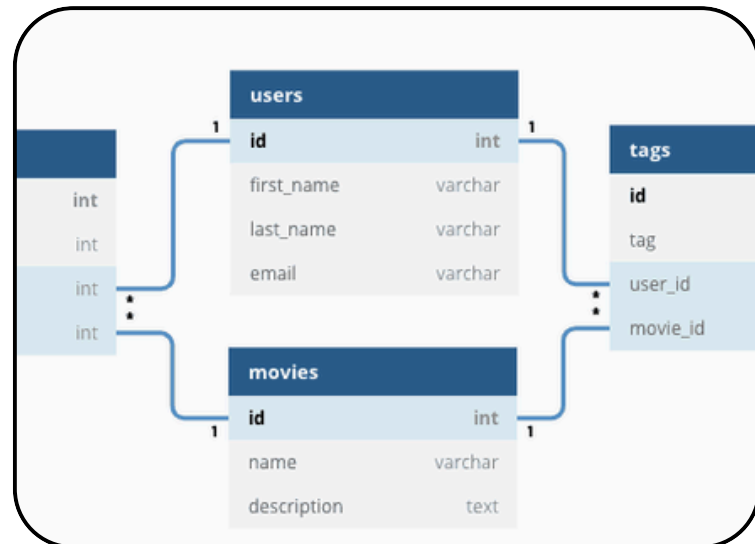
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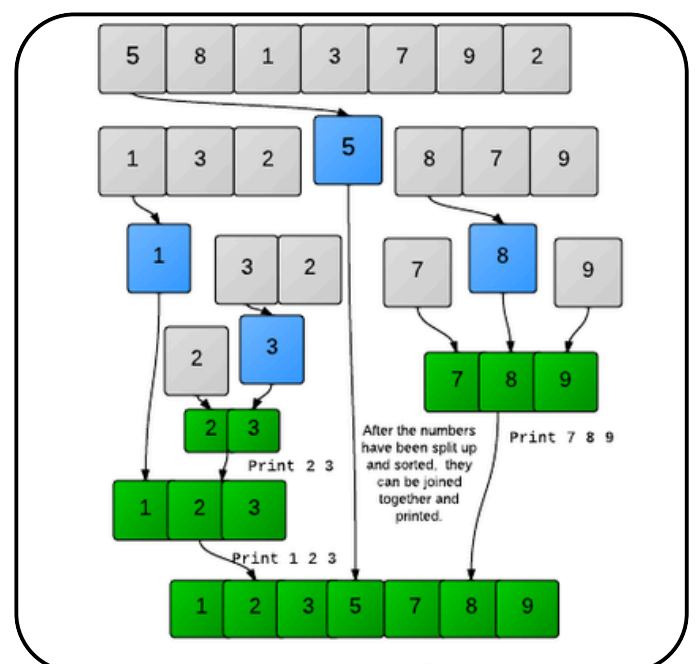
The Open Source Threat Intelligence Relational Dataset and Its Optimal Implementation

Asif Khan et al.

(IEEE Xplore, 2024)

Deep learning-based threat intelligence relationship extraction method, MAtt, enhances cybersecurity by improving threat entity correlation. This study introduces TreatRE, a dataset with 12 threat relations from 500 CTIs, addressing data limitations. MAtt integrates location perception, self-attention, and neuronal memory to refine extraction accuracy. Experimental results show a 95.4% accuracy, surpassing baseline models by 3.48%, demonstrating its effectiveness in threat knowledge construction.

Read more

Parameters Research of Facial Emotion Detection Algorithm Based on Machine Learning

Asif Khan et al.

(IEEE Xplore, 2024)

Emotion recognition enables computers to analyze human emotions for applications in entertainment, education, and healthcare. This study focuses on the 68-feature-point calibration method, which calculates facial key point relationships to determine emotional states. Using KNN and SVM, it examines how different parameters affect recognition accuracy. Experimental results show that detecting 68 facial key points helps optimize parameter selection for improved classification performance.
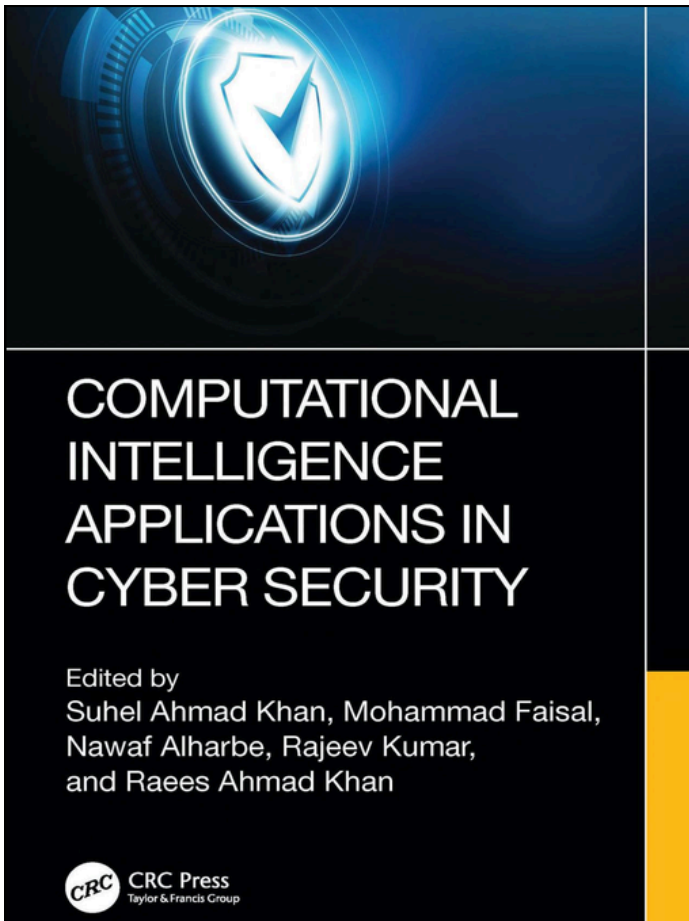

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Books

Computational Intelligence Applications in Cyber Security
ISBN: 9781032470597
CRC Press

A Framework for Adaptive and Efficient Requirement Change Management
ISBN: 9786208117566
Lambert Academic Publishing

Mohammad Faisal et al

Syed Adnan Afaq & Mohammad Faisal
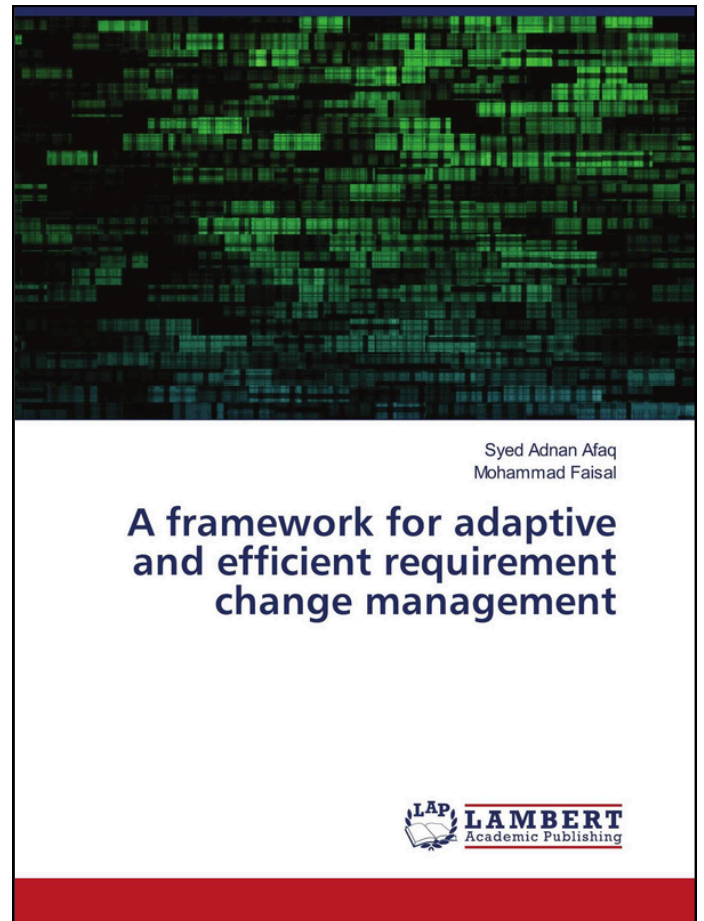
Cyber security is vital in Industry 5.0, addressing data security, blockchain, cloud computing, and evolving IoT and OT threats. This book explores security risks in AI, quantum computing, and AI-driven cyber security, along with applications in healthcare and national security. It concludes with a roadmap for securing computing environments, tackling emerging challenges, and highlighting future trends for sustainable development.

Requirement Engineering is a critical aspect of software development and an Efficient Requirement Change Management explores the root causes and attributes of requirement changes,. This book introduces a structured framework to handle changes early in the development process, ensuring adaptability while minimizing disruptions. It serves as an essential guide for developers, project managers, and software engineers seeking to navigate the complexities of requirement change management effectively.

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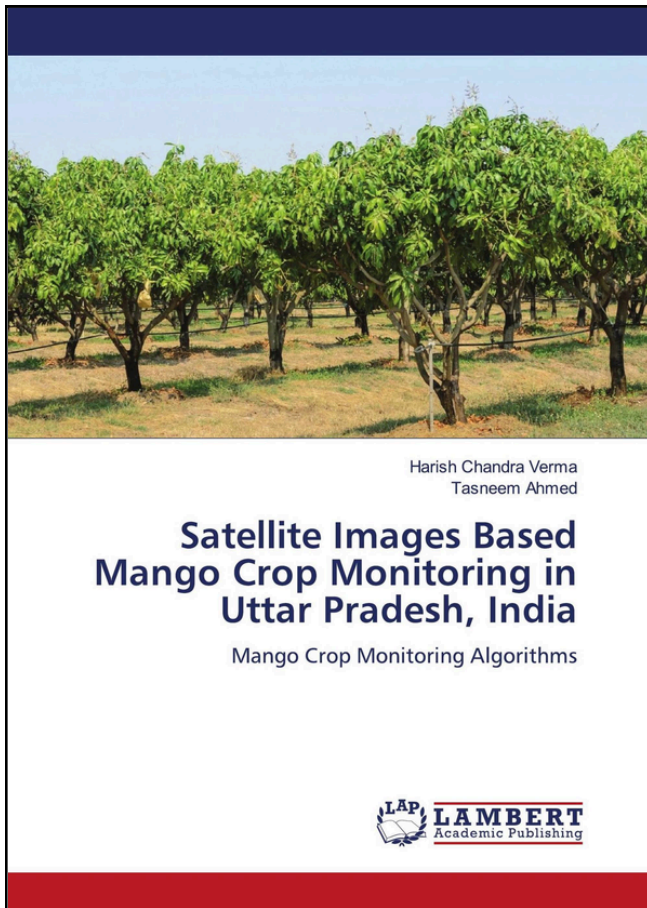
Harish Chandra Verma & Tasneem Ahmed

Satellite images play a crucial role in modern agriculture, enhancing crop monitoring and management. This book explores their application in mango cultivation in Uttar Pradesh, addressing farming challenges and socio-economic benefits. It presents mango monitoring algorithms to aid researchers, policymakers, and students in leveraging satellite technology for sustainable agriculture and precision farming.

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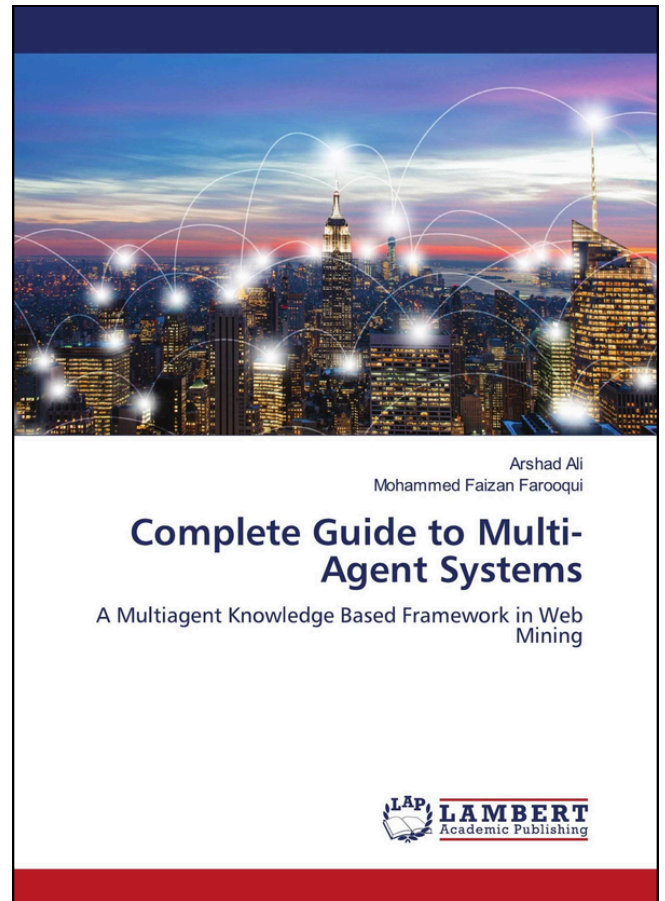
Arshad Ali & Mohammed Faizan Farooqui

Web mining has become increasingly important, requiring advanced knowledge representation and management frameworks to handle complex web data. This book presents the analysis and design of a knowledge-based framework for a multi-agent system in web mining. The framework enables efficient extraction, integration, and utilization of knowledge from diverse web sources through a distributed, collaborative approach. Building on these insights, the design phase outlines a comprehensive architecture for the proposed framework.

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09 Nov 2024

IP No: 436861001

Indian Patent

A Machine Learning-Driven Wearable Sensor Monitoring and Classification based Personalised Healthcare System

Mr. Vishal Agarwal

14 Oct 2024

IP No: 202441077609

Indian Patent

Blockchain Based Framework Optimized with Genetic Algorithms for Secure Electronic Health Records

Dr. Abida Khanam & Dr. Mohd Faizan Farooqui

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Sensor Based Robotic Display for Interactive Marketing

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Indian Patent

Automated Device for Early Detection of Tomato Diseases

Dr. Tasneem Ahmed Prof. Mohammad Faisal

21 Sep 2024

IP No: 431245001

Indian Patent

Unmanned Repelling Device

Dr. Asif Khan

19 Jan 2024

IP No: 202211040812

About Integral University

Integral University, a seat of educational excellence, is a premier university located in Lucknow, the capital city of Uttar Pradesh, India. The university is duly approved by the University Grants Commission (UGC) under Sections 2(f) and 12B of the UGC Act, 1956. It is also approved by the National Medical Commission, Pharmacy Council of India, Indian Nursing Council, Council of Architecture, Bar Council of India, Indian Association of Physiotherapists, National Council for Teacher Education, and UP State Medical Faculty. Integral University is accredited with an A+ grade by the National Assessment and Accreditation Council (NAAC) and recognized as a Scientific & Industrial Research Organization (SIRO) by the Department of Scientific & Industrial Research, Ministry of Science & Technology, Government of India. Integral Hospital is accredited by the National Accreditation Board for Hospitals & Healthcare Providers (NABH), the laboratories are accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL), and the agriculture program is accredited by the Indian Council of Agricultural Research (ICAR), Government of India.

About the Department of Computer Application

The Department of Computer Application at Integral University is dedicated to providing high-quality education, research, and innovation in the field of computing and information technology. The department offers a range of programs, including BCA, MCA, and Ph.D., designed to equip students with cutting-edge knowledge in areas such as artificial intelligence, data science, cybersecurity, software development, and cloud computing. With a team of experienced faculty members, state-of-the-art laboratories, and a research-driven environment, the department emphasizes both theoretical knowledge and practical application. Through industry collaborations, workshops, and hands-on projects, students are prepared to meet the evolving demands of the IT sector. The department strives to cultivate a culture of innovation and lifelong learning, empowering students to excel in academia, industry, and entrepreneurship while contributing to technological advancements for a better future.

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