ICAC 2023

ICAC 2023

The 4th International Conference on Applied Computing 2023

FACULTY OF COMPUTING
UTM Johor Bahru

APPLIED INDUSTRIAL ANALYTICS

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Preface

4th International Conference on Applied Computing 2023 (ICAC 2023)

ICAC is a multi-disciplinary conference which invites papers from various fields in both smart engineering & technology and Applied Computing field. The primary goal of the **ICAC** is to provide the opportunities for professionals from academia and industry in the engineering and computing fields to share their thoughts and empirical works both to those involved in their field or those interested in the subject being researched.

The objectives of this international conference are:

1. **As a Forum:** To provide a forum for researchers, educators, students and industries to share and exchange ideas and research findings in both fields of research.
2. **Communicate:** To give an opportunity to both academia and industries to communicate on problems faced in current research and the industries.
3. **Collaborate:** To create networks and stimulate potential collaborations between researchers in the same field of research.

The theme of ICAC 2023 "**Computing for Smart Technology**" is to spotlight all technical and practical aspects of Smart Technologies through recent issues, challenges and solutions. Through ICAC, researchers are able to understand the recent developments in this field, establish new collaborations and share insights and spark off their ideas on how to make the nation move smart and fast, as a result improving the nation as a smartest nation worldwide.

This hybrid conference is organized simultaneously with the **Faculty of Computing Research and Innovation Day 2023** and **Postgraduate Annual Research Seminars (PARS).** Presented papers will be published in Scopus indexed conference proceedings and all accepted papers will be invited for publication in Scopus indexed Journal.

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It is with great pleasure and anticipation that we welcome you to the 4th International Conference on Applied Computing (ICAC2023). This conference serves as a dynamic platform for researchers, scholars, practitioners, and industry professionals from around the world to convene, share insights, and explore the latest advancements in the field of applied computing.

The realm of applied computing is a nexus where theoretical concepts intersect with practical solutions, resulting in innovative applications that span a multitude of domains. Our conference aims to foster collaboration and dialogue among experts across various disciplines, encouraging the exchange of ideas that drive the evolution of technology and its impact on society.

This year's conference theme, "Computing for Smart Technology," reflects our commitment to exploring the intersections between theory and practice in the ever-evolving landscape of applied computing. As we gather virtually/on-site, we look forward to delving into discussions that transcend traditional boundaries and contribute to the advancement of knowledge and solutions in diverse fields.

ICAC2023 in line with Faculty of Computing Research and Innovation week will feature an exciting array of keynote presentations, panel discussions, technical sessions, workshops, and opportunities for hands-on engagement. We are confident that these activities will provide an engaging and enriching experience for all participants.

On behalf of the organizing committee, we extend our sincere gratitude to the authors, presenters, reviewers, sponsors, and volunteers who have contributed to the success of this conference. Your dedication and enthusiasm are instrumental in shaping the intellectual discourse and future direction of applied computing.

We invite you to join us on this remarkable journey of exploration, discovery, and knowledge sharing. Together, we can chart new pathways in applied computing that will shape the future for generations to come.

Thank you for your participation and support.

Warm regards,

Dr. Yusliza Yusoff
Conference Chair
4th International Conference on Applied Computing (ICAC2023)

Program
Tentative – 19 August 2023
Pre-Conference Workshop

Time	Activity
8.30 AM – 9.00 AM	Registration
9.00 AM - 10.45 AM	**Workshop 1** Topic : Web Scraping Instructor : Dr. Mohamad Shukor bin Talib Venue : Makmal Pengajaran 1 (MP1), Level 2 : N28a, Faculty of Computing, UTM
11.00 AM - 1.00 PM	**Workshop 2** Topic : Machine Learning Instructor : Ts Dr. Mogana Darshini Ganggayah Venue : Makmal Pengajaran 1 (MP1), Level 2: N28a, Faculty of Computing, UTM

webex
by CISCO

Virtual Link: <u>Click Here</u>
Meeting number: 2514 584 5096
Password: mM8Zuv3gxQ5

Program
Tentative – Day 1 : 20 August 2023

Time	Activity
8.30 AM – 9.00 AM	Registration
9.00 AM - 9.10 AM	Welcoming Speech by **Head of ALIAS**
9.10 AM - 9.40 AM	Keynote 1 : Assoc. Prof. Dr. Ruslinda A. Rahim Director of National Nanotechnology Center, Ministry of Science, Technology and Innovation (MOSTI) Title : Nanocomputing
9.45 AM - 10.15 AM	Keynote 2 : Mr. Iskandar Iskak Director Sales Education Telekom Malaysia Title: Case Study of How A National Telco Learns To Automate via RPA
10.15 AM - 10.45 AM	Coffee Break
10.45 AM – 12.45 PM	Parallel Session 1 - 3
12.45 PM - 2.00 PM	Lunch Break
2.00 PM - 4.15 PM	Parallel Session 4 - 6
4.15 PM - 4.45 PM	Tea Break
4.45 PM – 5.30 PM	Closing Ceremony

Program
Tentative – Day 2 : 21 August 2023

Time	Activity
9.00 AM – 9.30 AM (VOOV Platform)	Keynote 2 : Prof. Dr. Xi Yang Dean of School of Communication and Electronic Engineering, Jishou University, Jishou, China Title: Effective Spectrum Sensing Algorithm in Non-asymptotic Conditions for Cognitive Radios

Parallel Keynote
Session – Day 1 : 20 August 2023

Parallel 1 - (Venue: Emerald 1)

10.45 AM – 11.15 AM	**Keynote Speaker:** Norlisa Francis Nordin , CEO Intelliware Solutions Sdn. Bhd.

Parallel 2 - (Venue: Emerald Lounge)

10.45 AM – 11.15 AM	**Keynote Speaker:** Assoc. Prof. Dr. Siti Zaiton Mohd Hashim, Deputy Dean of Research and Innovation, Faculty of Computing, UTM

Parallel 4 - (Venue: Emerald 1)

2.00 PM – 2.30 PM	**Keynote Speaker:** Dr. Fairoza Amira binti Hamzah, Senior AI Engineer, Torum Technology Sdn Bhd

Parallel Keynote
Session – Day 2 : 21 August 2023

Session 1 (VOOV Platform)

9.00 AM – 9.30 AM	**Keynote Speaker:** Prof. Dr. Xi Yang, Dean of School of Communication and Electronic Engineering Jishou University, Jishou, China
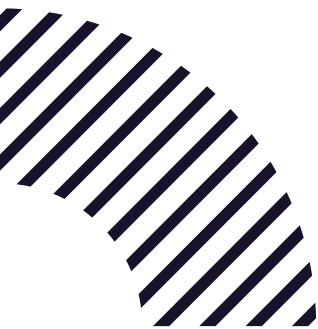
Keynote Speaker 1

Dr. Fairoza Amira binti Hamzah
Senior AI Engineer
Corpy & Co. Inc., Inc., Japan

Dr Fairoza is currently working as a Senior AI Engineer in Corpy & Co. Inc. She previously worked as Senior AI Engineer in Torum, Senior Staff Engineer (Data Scientist) in STMicroelectronics, a co-founder in Ever AI Technologies, a Machine Learning Engineer in Vettons and an Assistant Professor in the Kyoto College of Graduate Studies for Informatics, Japan. She completed her Ph.D of Information Science & Control Engineering from Nagaoka University of Technology, Japan. She was also the recipient of Women in ICT ASEAN awards in 2021 under the Rising Star category. She is also active in community works such as CoronaTracker (Research Lead) and Women in AI (Ambassador of Malaysia). She has recently been awarded the Ambassador of the Year (Runner-up winner) for her active works in Women in AI.

Keynote Speaker 1

Dr. Fairoza Amira binti Hamzah
Senior AI Engineer
Corpy & Co. Inc., Inc., Japan

Deploying AI Projects in Industry : Myths and Reality

AI projects are developed according to the software engineering project management, but with few exceptions according to the industry needs. AI can help speed up operations and can yield more revenue, but requires long term investments. AI requires multiple iterations of training and development to ensure the reliability of any AI features developed. Besides that, AI projects in different industries require different sets of data and algorithms. Often, the tradeoff between processing time, operational cost and algorithms accuracy are considered to deploy an AI project. The rate of AI project deployment usually depends on the importance of the project, manpower and computing power that the company has.

Keynote Speaker 2

Iskandar Iskak
Director Sales Education
Telekom Malaysia

Iskandar Iskak is the Director Sales Education, TM ONE. He received his Bachelor of Engineering in Electronics Semiconductor from Tokai University, Japan and his Master of Science (MSc), in Engineering Business Management with Merit Award from University of Warwick. He also served as the General Manager of Vertical Marketing and Sales Enablement TM ONE from June 2016 until December 2018 and General Manager of Vertical Business Development, Customer Advocacy TM ONE from January 2019 until December 2019. He specializes in developing sales and marketing capabilities for the last three years with multiple ground breaking achievements.

Keynote Speaker 2

Iskandar Iskak
Director Sales Education
Telekom Malaysia

Case Study of How A National Telco Learns To Automate via RPA

With RPA (Robotic Process Automation), software robots are developed to imitate the processes a human works with a computer to do simple, high-volume, and repetitive tasks. For example, an RPA bot can click around a user interface, browse the web, grab data, and enter keyboard inputs. In other words, RPA can do the kind of tedious work that bores people, freeing them up to do other things. It also works faster than people and eliminates human error.

Yet for a huge national telco like Telekom Malaysia, those processes runs in the number of hundreds of thousands, if not millions. And to make things worse, it runs deep within working echelons of the company, making it virtually impossible for a centralized group of professional developers to uncover and react fast enough to changing customer requirement and dynamic competitive pressures.

Therefore we have adopted a low code approach to enable citizen developer communities to flourish within the company and democratize automation.

Keynote Speaker 3

Prof. Dr. Xi Yang
Dean of School of Communication and
Electronic Engineering
Jishou University, Jishou, China

Xi Yang was born in Yueyang in 1978. He received the B. S. degree in electronic information engineering from the Jishou University, Jishou, China, in 2001, and the M. Eng. degree in communication and information system from the North China Electric Power University, Baoding, China, in 2004, and the Ph. D. degree in Information and Communication Engineering from the National Mobile Communications Research Laboratory (NCRL), Southeast University, Nanjing, China, in 2014.

He has been with the School of Communication and Electronic Engineering (SCEE), Jishou University, Jishou, China, since 2009, where he is currently the dean of the SCEE. From 2014 to 2020, he was a post-doctoral with the State Key Laboratory of Millimeter Waves, Southeast University, Nanjing, China. He was the leader of 3 scientific projects financed by the National Science Foundation of China (NSFC). He published more than 50 papers in journals and conference proceedings and authorized 10 patents in the area of wireless communications and signal processing. His current research interests include cognitive radio, smart communication, statistical and intelligent signal processing for wireless communications and smart grids.

Prof. Yang is a member of IEEE and IEICE. He serves as a technical reviewer for various international journals. He received Third Prizes of teaching achievement of Hunan Province of China in 2019 and 2022, respectively. Currently, he serves as a member of the Discipline Evaluation Group and the Excellent Talent Project of Hunan Province in China.

Keynote Speaker 3

Prof. Dr. Xi Yang
Dean of School of Communication and
Electronic Engineering
Jishou University, Jishou, China

Effective Spectrum Sensing Algorithm in Non–asymptotic Conditions for Cognitive Radios

This presentation mainly focuses on the primary signal detection algorithms under non-asymptotic conditions for cognitive radios networks, including primary signal detection under small sample conditions in the uniform noise scenario, and efficient detection of primary user signal in the non-uniform noise environment.

The main results are as follows: ① Aiming at the problem of detecting the primary user signal in the uniform white noise scenario under the non-asymptotical condition, an improved blind detection algorithm based on the spherical hypothesis test is proposed. Theoretically, an accurate expression of the false alarm probability based on Meijer's G function is derived. At the same time, a high-precision approximate calculation method for the false alarm probability and a low complexity calculation method for the theoretical decision threshold are proposed, and the theoretical analysis result of the detection probability is also given; and ② Aiming at the problem of detecting the primary user signal in the non-uniform noise scenario under the non-asymptotic condition, a detection algorithm based on the independence hypothesis test is proposed. The algorithm has the advantages of reliable decision results under the condition of relatively small sample size or large signal dimension. At the same time, the proposed method for the calculation of decision threshold is simple to implement, so it has better real-time performance.

Keynote Speaker 4

**Assoc. Prof. Dr. Siti Zaiton Mohd Hashim
Deputy Dean of Research and Innovation
Faculty of Computing, Universiti Teknologi
Malaysia**

Siti Zaiton Mohd Hashim is an Associate Professor and currently holds a post as the Deputy Dean of Research and Innovation in the Faculty of Computing at Universiti Teknologi Malaysia (UTM) in Johor. She received her B.Sc. degree in Computer Science from the University of Hartford in the USA, an M.Sc. in Computing from the University of Bradford in the UK, and a Ph.D. in Soft Computing from The University of Sheffield in the UK. Her research interests include Soft Computing and its applications, Machine Learning, and Intelligent Systems. She has supervised or co-supervised over 20 master's students and 40 Ph.D. students. She has authored or co-authored more than 120 publications, with an H-index of 24 and over 3,000 citations. She is now an associate member of the UTM Big Data Centre of Excellence (UTM-BDC) at UTM.

Keynote Speaker 4

Assoc. Prof. Dr. Siti Zaiton Mohd Hashim
Deputy Dean of Research and Innovation
Faculty of Computing,
Universiti Teknologi Malaysia

Generative AI in Smart Technology: From Automation to Personalization

The integration of Generative AI with smart technology has caused a paradigm change in the quickly changing technological landscape—from the mechanisation of chores to the development of profoundly personalised experiences. A captivating trip through the evolution of Generative AI's function within the field of smart technology is set forth here. We dig into its evolution into a creative powerhouse that customises interactions to individual tastes, starting from its early days of automating regular activities. Examining the transition from automation to creativity and emphasising the part Generative Adversarial Networks (GANs) play in inspiring original ideas that go beyond simple automation. It explores the artistic creations of AI, highlighting how language production and engagement with AI-authored material have transformed communication. Additionally, it moves into the area of customization, where Generative AI uses user-data to create experiences that are especially for each individual. It explains how this breakthrough turns intelligent surroundings into individualised friends that can anticipate user requirements and boost engagement. The presentation concludes with a futuristic vision that examines how Generative AI is prepared to move beyond personalisation and collaborate with people to create experiences and solutions. In the end, the presentation encourages the audience to embrace the changing environment where technology is no longer just used for automation but is a partner in empowering us with original insights and personalising our interactions in previously unthinkable ways.

Keynote Speaker 5

Assoc. Prof. Dr. Ruslinda A. Rahim
Director of National Nanotechnology Center
Ministry of Science, Technology and Innovation
(MOSTI)

Dr. Ruslinda A. Rahim is a renowned researcher and academic in the field of nanotechnology. As the Director of the National Nanotechnology Center under the Ministry of Science, Technology and Innovation, she has made significant contributions to nano structure fabrication and carbon nanotubes. With a Ph.D. in Nanoscience and Nanoengineering from Waseda University, her expertise lies in utilizing nanotechnology for biosensing applications. Dr. Ruslinda's research focuses on developing aptamer-based diamond biosensors for protein detection. Her dedication to research and innovation has earned her recognition in the scientific community, shaping the future of nanotechnology.

In addition to her directorial role, Dr. Ruslinda holds the position of Research Fellow/Senior Lecturer at the Institute of Nano Electronic Engineering, Universiti Malaysia Perlis. She has also served as the Deputy Dean at the Research Management & Innovation Centre and worked as a lecturer in the field of microelectronics. With a career spanning academia and industry, Dr. Ruslinda's commitment to advancing nanotechnology is evident in her extensive contributions. As a prominent figure in the field, she continues to drive advancements in nano structure fabrication and carbon nanotubes, playing a pivotal role in shaping the future of this rapidly evolving discipline.

Keynote Speaker 5

**Assoc. Prof. Dr. Ruslinda A. Rahim
Director of National Nanotechnology Center
Ministry of Science, Technology and
Innovation (MOSTI)**

Nanocomputing

As technology improves and its intertwining application widens in our daily lives, the need to produce devices as small as possible becomes more pressing. It is also imperative to ensure these devices are energy efficient without compromising their performance. Computers, now an indispensable part of our modern lives are no exception, ranging from supercomputers to smartwatches, the evolution of computing power, size and applications are fascinating throughout the decades. The future is far more exciting. This keynote will look into the potential of nanocomputing and its applications in numerous technology domains, as well as challenges and promises. The variations of computing at nano scale, from natural to quantum computing in the Big Data age will be discussed.

Keynote Speaker 6

Norlisa Francis Nordin
CEO Intelliware Solutions Sdn Bhd

Norlisa, also known as Lisa, is a 20-year veteran of multiple industries, including semiconductor, IT, Blockchain, and business development. In addition to Malaysia, she has extensive work experience in Japan, the United States, and Singapore.

Bachelor of Electrical Electronic System Engineering from Nagaoka University of Technology, Professional in Semiconductor Fabrication from the University of California Berkeley, Tradeshow Professional from San Jose State University, Copywriter Professional from Singapore Institute of Management, Physics Researcher at USM, and Master of Mechanical Engineering from UTM are her credentials. She is currently a PhD candidate at IIUM-ISTAC.

In the past four years, she has become such a proponent of Blockchain technology that she is now the CEO of a Blockchain-based software company, Intelliware Solutions SDN BHD, with offices in Medini 6, Cyberjaya, and Penang.
Additionally, Intelliware Solutions is an affiliated trainer for Blockchain Council Certification, which consists of all 35 Certifications.

She has demonstrated the utility of Blockchain across all technological domains, including agritech, edtech, Fintech, and others. Today, she will elaborate on the ways in which Blockchain can enhance Digital Marketing.

Keynote Speaker 6

Norlisa Francis Nordin
CEO Intelliware Solutions Sdn Bhd

Blockchain Technology

Employees pose a significant risk of both intentional and unintentional insider assaults due to their extensive familiarity with a company's systems and security measures. Companies risk losing money and having their reputations harmed as a result of these security lapses. Our keynote address, titled "Securing Reality: How Blockchain Battles Data Tampering in the Real World," delves into how blockchain technology strengthens data integrity and counters insider threats. Learn how blockchain may be used to develop secure and robust smart technology solutions in a variety of fields. In our electronically interconnected world, insider assaults pose a serious threat to enterprises. Join us to see how blockchain can protect your company from this threat and keep your data safe.

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General
Information

About UTM

Since its establishment as a technical school in 1904 and finally a full-fledged university in 1972, UTM has played a pivotal role over the years as the nation's largest contributor of technical and professional workforce for the local industry, government agencies as well as multinational companies. UTM has two campuses; one is located in the heart of Kuala Lumpur, known as the UTM Kuala Lumpur Campus. The other, which is its main campus, is situated in a strategic location in the Iskandar Malaysia region, a vibrant economic corridor in Johor, the south of Peninsular Malaysia.

Along with its established vision to be recognised as a world-class Entrepreneurial Research University, UTM is set to be the centre of academic and technological excellence. Its mission is to be a leader in the development of human capital and innovative technologies that will contribute to the nation's wealth creation. UTM is now regarded as Malaysia's premier institution in engineering, science and technology and is ranked in the top 100 league in the World University Rankings in the field of engineering and technology.

UTM Johor Bahru   UTM Kuala Lumpur   UTM Pagoh

UTM's vision is therefore in line with the aspiration of the nation towards becoming a knowledge-based, innovation-led economy grounded in creativity and innovation with high value creation. The differentiation strategy for the university is the concept of "New Academia", which is an attempt at embracing fresh dimensions in a knowledge culture beyond the conventional academia paradigm. It is an integrated model of knowledge advancement that moves across disciplines and beyond boundaries. Knowledge acquisition, application and dissemination happen in a more dynamic, vibrant and enriching way based on practicality, meaningful engagement, smart partnership and relevant exposure. The "New Academia" aims to make higher education more efficient and integrated into socio-economic development. To make this a reality requires good governance, steady funding source and entrepreneurial spirit.

Innovation is also central to UTM's core values. A culture of innovation permeates across all dimensions of the university including teaching and learning, research and development, writing and publication, management and administration, staff and student development, consultancy and professional services and also university social responsibility. Innovation is expedited by the university community through concerted efforts and a strong team spirit with shared values and purpose.

Since becoming a research university, UTM is committed to becoming a graduate-focused university; more innovative research-based postgraduate programmes are offered and more attractive and varied modes of PhD programmes implemented, such as PhD by Publication, Industry-based Doctoral Degrees, PhD by Fast Track and Double/Dual Doctoral Degrees. This not only provides flexibility in postgraduate study approaches, but at the same time contributes to increased publications and citations, while enhancing technological development and a value-driven economy.

Through a strategic transformation of its organisational structure, UTM is focused on creating a vibrant knowledge culture and fertile intellectual ecosystem that inspire creativity, innovation and entrepreneurial mindsets. This is also in tandem with the transformation plan of the Ministry of Higher Education to turn Malaysia into an educational hub renowned for high quality educational standards and research excellence in strategic key areas of knowledge and specialised disciplines as well as multidisciplinary fields.

Applied Industrial Analytics Research Group

ABOUT Applied Industrial Analytics
The Applied Industrial Analytics Research Group is created to serve as a platform for collaboration between industry an researchers from higher education institution. Our mission is to foster collaboration by embracing industry driven research culture, provide innovative and creative solution utilizing current technology in analytics that suit industrial needs.

Research Area
- Modeling
- Optimization
- Simulation
- Industrial Analytics
- AI-Softcomputing

Mission:
1. To foster collaboration by embracing industry driven research culture
2. Provide innovative and creative solution utilizing current technology in analytics that suit industrial needs.

Intelligent Informatics Research Group (IIRG)

IIRG is a diverse team of computer science professionals dedicated to the advancement and improvement of artificial intelligence and its applications in knowledge discovery, computational biology, social informatics and design science, and applied computing.

Our objective at the IIRG is to be at the forefront of artificial intelligence and its diverse applications. We are a heterogeneous team of computer science specialists dedicated to the ongoing creation and improvement of intelligent algorithms, systems, and approaches. We hope to advance knowledge discovery, computational biology, social informatics and design science, and applied computing by promoting a collaborative and inventive environment. Our ultimate goal is to develop cutting-edge solutions that address real-world AI difficulties while encouraging knowledge sharing and pushing the bounds of AI Fundamentals.

Focus Area
- Artificial Intelligence Fundamentals
- Knowledge Discovery
- Computational Biology
- Social Informatics and Design Science
- Applied Computing

A Hybrid CNN-SVM Classifier for Sex Determination using Femur Bone

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Abstract. Forensic anthropology applies skeletal material to determine biological profiles, including sex, ancestry, age, and stature. Sex determination is crucial for identifying biological profiles and is often used in forensic investigations to identify victims. The pelvis bone is traditionally employed as the most accurate skeletal bone for estimating human sex. However, damage to the pelvis bone can often complicate the process. As an alternative, the femur bone can be used for sex identification, although it requires substantial time and expertise. Deep learning, especially CNNs, have demonstrated potential for image-based object identification, including sex determination from skeletal remains. However, the limited availability of femur bone data can lead to overfitting issues when employing CNN models.This study proposes a hybrid classifier that combines the strengths of CNN and Support Vector Machines (SVMs) for gender determination using femur bone images. The CNN-SVM hybrid leverages CNN's feature extraction capabilities and SVM's robustness with small datasets. The hybrid model overcomes the challenges posed by limited data availability and sets a new benchmark for performance. The constructed architecture demonstrates remarkable performance, achieving 100% training and validation data accuracy. Moreover, the model exhibits impeccable precision, recall, and F1 scores, emphasizing its reliability and effectiveness for sex determination. This research presents a significant advancement in forensic anthropology by offering a fast, accurate, and reliable model for sex determination using femur bone images. By fusing deep learning techniques with traditional classifiers, the hybrid CNN-SVM approach demonstrates its potential to mitigate data scarcity and enhance the accuracy of sex identification in forensic investigations.

A Method for Constructing Concurrent Processing Model of Xiangxi Hmong Part-of-Speech Tagging

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Abstract. The fuzzy Petri net (FPN) with concurrent processing capabilities is an effective tool for testing, modeling, and analyzing knowledge base systems (KBS). The IF-THEN rules in KBS are upgraded to fuzzy production rules (FPRs), and a method for constructing the part-of-speech (POS) ordering concurrent processing model based on FPRs is proposed to perform contemporary reasoning on rules in Xiangxi Hmong POS tagging KBS.This method automatically constructs a FPN equivalent to the FPRs by applying the reasoning path denoted with the "reasoning chain + parameter chain", and can overcome the limitations of manual modeling. A set of FPR containing simple rules, AND rules and OR rules as a study case is used to verify the validity and feasibility of the proposed method. The result of case study shows that the POS tagging concurrent processing model generated by this method can fully express the complete information contained in the FPRs.

A Novel Harmony Search Algorithm for Part-of-Speech Tagging of Square Hmong Corpus

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Abstract. Data-driven models perform poorly on part-of-speech tagging problems with the low-resource corpus, such as the square Hmong language. This paper designs a weight evaluation function to reduce the influence of unknown words. It proposes an improved harmony search algorithm utilizing the roulette and local evaluation strategies for handling the square Hmong part-of-speech tagging problem. Accuracy, Precision, Recall, and F1 are used to evaluate the performance of the model. The experiment shows that the average accuracy of the proposed model is 6%, 8% more than HMM and BiLSTM-CRF models, respectively. Meanwhile, the average F1 of the proposed model is also 6%, 4% more than HMM and BiLSTM-CRF models, respectively.

A Review of Classification on Credit Repayment Default Behaviour using Machine Learning Algorithms

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Abstract. Youth participation in the market either through employment in industry or starting up a business is significant in accelerating Malaysia's economic growth. However, having a lack of finance leads them to apply credit facilities to meet their living expectations. Challenges in life such as the increase in commitment as age increases, slow progress on a salary increase, and status level of youth may affect the ability for the youth to make the repayment on their credit loan and causing the credit repayment to have defaulted. A higher default rate of credit repayment impacts the sustainability of all credit facilities providers. There are two reason youth default credit repayment, either the young customer does not have enough money to pay due to lack of income, or they have the means to pay but choose not to pay. To reduce the rate of default credit repayment among young customers, it is important for credit facilities to study whether the default is due to lack of income or the consumer's behaviour. Machine learning classification algorithm able to classify youth customers into these two categories. The assumption of the findings is the youth customer credit repayment default is due to lack of income instead of because of their behaviour.

A Review of Deep Learning Based Approach for FruitObject Detection and Recognition

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Abstract. Robotic harvesting is a trend in modern agricultural development, and robot visual recognition and detection is one of the most critical aspects. Therefore, the rapid and accurate identification of fruits is extremely important. This article reviews the research progress of fruit object detection and recognition based on deep learning in recent years. Firstly, traditional methods and machine learning methods for fruit object detection and recognition are briefly introduced. Then, existing deep learning algorithms are analyzed and compared in detail, pointing out their limitations and challenges. Finally, the research achievements and existing problems of fruit object detection and recognition methods are summarized, and future development directions are proposed.

A Review of Human Post Estimation Algorithm Based on Convolutional Neural Network

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Abstract. With the flourishing improvement of profound learning and man-made brainpower lately, human posture assessment has gradually become a burning issue in artificial intelligence computer vision, and numerous human posture assessment techniques and exploration speculations keep on arising. Human pose estimation is comprehended as the problem of recognizing and connecting the key points of the body, and this paper presents a comprehensive review of the research progress of human pose estimation methods based on convolutional neural network. First, the differences between traditional algorithms in the HPE domain and the algorithms of convolutional neural networks are introduced. After comparing and analyzing various single-person pose estimation methods, the multi-person pose estimation algorithms are summarized from the perspectives of top-down and bottom-up methods. In the top-down approach, the solutions to the problems of local overlapping and difficult detection of atypical joints are emphasized; in the bottom-up approach, the contribution of cluster methods to the detection of joints is emphasized. In recent years, the representative Transformer-based methods are also introduced and analyzed in this paper. Finally, an overview of the current research challenges and future hot trends is given to clearly present the development of the field.

A Study on the Alternative of Traditional Netball Teaching by Using Multimedia Online Netball Teaching

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Abstract. The purpose of this study is to highlight the benefits of teaching basic netball skills virtually. Netball is one of the high potential sports in Malaysia, but the number of young talents for this sport is inadequate. Traditionally, netball teaching is done face to face in schools. However, during the Covid-19 pandemic, all contact sports are banned due to the restriction of movement and restriction of outdoor activities to prevent the spread of the virus. Thus, this method is proposed to overcome this dilemma and ensure our society could practice a healthy lifestyle while staying at home during this Covid-19 pandemic season. Multimedia online teaching will provide beneficial knowledge through interactive media and e-module which can be accessed by more students and all netball fans. A project and survey has been conducted on teaching basic netball skills and 75% of the participants understand the objectives conveyed on the materials provided. This shows that multimedia online netball teaching can provide necessary information to participants through online platform.

Acceptance of Financial Technology Among Malaysia Investors: Cryptocurrency Investment

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Abstract. The growing prominence of cryptocurrency, coupled with advancements in financial technology, underscores the necessity of examining its potential as a financial instrument for investment and payment purposes in forthcoming times. The comprehension of cryptocurrency adoption and usage is pivotal for its effective assimilation within the financial landscape. Consequently, an in-depth exploration of users' intentions becomes highly significant within this research context. This study's central aim is to analyze the determinants shaping investors' acceptance of cryptocurrency utilization, leveraging the conceptual framework provided by the Technology Acceptance Model (TAM). The study's findings reveal that perceived usefulness (PU), innovativeness (INNO), and trust (T) exert a positive influence on users' attitudes (BA) towards embracing cryptocurrencies for transactions and their intention to integrate (IU) these digital assets. However, the perceived ease of use (EU) does not appear to substantially affect users' attitudes (BA) in the context of this investigation. The implications derived from these outcomes hold noteworthy value for both theoretical comprehension and practical application. The study's results are anticipated to yield insightful contributions to the realm of cryptocurrency adoption, furnishing a roadmap for subsequent investigations in this domain. By gaining insights into the factors that mold users' willingness to accept and adopt cryptocurrencies, researchers and policymakers are better equipped to make well-informed decisions that can foster the widespread adoption and effective implementation of cryptocurrencies within the financial sector.

An Improved Algorithm Based on Snake Optimizer

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Abstract. Based on the Snake Optimizer algorithm, a Mixed Strategy Snake Optimizer Improvement Algorithm (MSSO) is proposed. A dual inverse learning strategy based on Tent chaotic mapping and mirror imaging learning strategy is proposed, which combines with the spiral foraging strategy to enhance the acquisition of the better population individuals in the pre-global search stage, and to enhance the population diversity to avoid being trapped in the global. Meanwhile, a sinusoidal exponential food index is proposed to replace the limited judgment benchmark of the original algorithm, which leads to increase the global search. The improved algorithm has faster convergence speed than the snake optimizer algorithm, the whale optimization algorithm, the gray wolf optimization algorithm, the grasshopper optimization algorithm, the Harris hawk optimization algorithm, and the pelican optimization algorithm, as tested by eight benchmark functions; the algorithm of this paper also has a significant convergence speed and stronger ability to search for the optimal than the three improved algorithms. The effectiveness and efficiency of MSSO in various landscapes concerning the exploration-exploitation balance and convergence curve speed are validated by the experimental results and statistical comparisons.

An Improved Cuckoo Search Algorithm Optimizes Coverage in Wireless Sensor Networks

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Abstract. Focusing on the drawbacks of the standard Cuckoo Search (CS) algorithm, this manuscript proposes an improved CS using the PSO operator and Opposition-Based Learning (ICS-PSO-OBL) to balance the exploration and production capability. Firstly, the iteration is carried out by updating the old solution dimension-by-dimension to ensure the independent updating among the dimensions in the high-dimensional optimization problem. Then, the PSO operator is integrated to improve the imbalance between exploration and exploitation ability in the preference random walk stage. Finally, elite individuals are selected from the population using reverse search to improve the probability of finding the optimal solution based on the fitness value. Moreover, the ICS-PSO-OBL is applied to optimize the coverage of wireless sensor networks (WSNs) to maximize the coverage in wireless sensor networks by transforming regional monitoring into point monitoring using the discretization method in WSNs. In the experiments, the ICS-PSO-OBL with the standard CS and three CS variants (MACS, ICS-2, and ICS) are utilized to execute the simulation experiment under different numbers of nodes (20 and 30, respectively). The experimental results reveal that the optimized coverage of ICS-PSO-OBL is 18.36%, 7.894%, 15%, and 9.02% higher than that of standard CS, MACS, ICS-2, and ICS when the number of nodes is 20. Moreover, it is 16.94%, 9.61%, 12.27%, and 7.75% higher when the number of nodes is 30, the convergence speed of ICS-PSO-OBL, and the distribution of nodes are superior to others.

An Improved Steganography System Based On Contrast Variation with Fibonacci Decomposition to Increase Imperceptibility

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Abstract. There are currently many obstacles in the way of the design and development of a reliable image steganography system. These include low capacity, weak robustness, and invisibility. Overcoming these restrictions requires enhancing the steganography system's capacity and security while keeping the signal-to-noise ratio (PSNR) high. In light of these considerations, the purpose of this research is to create a technique to successfully embed secret data into a cover image, thereby realizing a strong steganography scheme. The planning and execution of the suggested method occurred in multiple stages. To boost the scheme's text security and payload capacity, a novel encryption approach dubbed shuffle the segments of the secret message was integrated with an improved Huffman compression algorithm. To further strengthen the approach, the bit depth of each pixel was doubled from 8 to 12 using a Fibonacci-based picture transformation decomposition method. Third, the schemes were made stealthiest by the use of an enhanced embedding technique that combined a random block or pixel selection with the implicit secret key generation. Experimental evaluations of the suggested scheme's performance are conducted to determine its stealth, security, robustness, and capacity. Against the proposed scheme, resistance is analyzed for its resistance to non-structural, type 2, and statistical steganography detection attacks. The acquired PSNR values indicated that the proposed technique was successful in achieving higher imperceptibility and security than the reported findings while preserving a larger capacity. In a nutshell, the problems were fixed since the proposed steganography system was superior to existing data hiding schemes on the market.

An Investigation of The Factors Influencing Behavioral Intention Towards E-Learning Among Students at Public Universities in Yemen.

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Abstract. By utilizing Information and Communication Technology (ICT) to provide a more dynamic education environment, e-learning has completely transformed higher education. The issues impacting the acceptance of e-learning must be recognized and addressed in order for it to be successfully implemented in Yemen's public universities.The Yemeni administration partakes a steps to establish e-learning in both public and private universities, but there are still a number of obstacles that must be solved for the system to be successful. The determination of this research is to limit whether e-learning can be implemented at Yemen's public universities and to look into the variables influencing students' behavioral intentions towards it.The Technology Acceptance Model (TAM) and the DeLone and McLean Model of Information Systems Success (D&M ISS) were used as theoretical models to accomplish these objectives. A questionnaire was used to gather data from a model of 280 undergraduates from seven Yemeni public universities as part of a survey study. The research models' postulated factors' predictive behavior was examined using structural equation modelling (SEM). The results presented that perceived ease of use, system quality, and ICT infrastructure had a substantial impact on students' behavioral intentions towards e-learning. The association between these variables and behavioral intention was also mediated by user pleasure. The study comes to the conclusion that when students find e-learning to be helpful and simple to use, they are more inclined to use.

Classification of Mental Illness Risk Among Employees in Workplace using Machine Learning

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Abstract. This paper addresses the growing concern of workplace mental illness, impacting productivity and organizational well-being. Employing machine learning, a classification method is developed to assess the likelihood of mental illness among employees. The study encompasses comprehensive mental health analysis and risk factor identification. Data retrieval and preprocessing yield crucial mental health insights. Machine learning methods including Logistic Regression, Decision Tree, and Random Forest are utilised to train a classification model. Recursive Feature Elimination (RFE) enhances model performance by selecting impactful features. Among models, Random Forest achieved 84.10% accuracy. RFE is applied, comparing Feature Sets 1, 2, and 3, with Feature Set 3 exhibited the highest accuracy at 84.19%. This highlights the potency of Feature Set 3 in enhancing the accuracy of Random Forest by 0.09%. The results highlight the effectiveness of the classification method in assessing the risk of mental illness. Implementing this approach can enable organizations to address mental health concerns, elevating productivity and well-being proactively. The study concludes by proposing real-world applications and emphasizing the method's potential for workplace mental health improvement.

Classifying Ovarian Cancer Using Deep Learning Method Based On Multi-Omics Data

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Abstract. Analysis that use multi-omics provide reliable information about disease mechanism and promotes better understanding of complex diseases like cancer. Hence, in recent years researchers are motivated to conduct study with complex deep learning models, obtaining more reliable result using multi-omics data. In this study, Stacked Denoising Autoencoder and Long-Short Term Memory, two deep learning methods based on multi-omics data were employed for classifying the ovarian cancer. Three types of omics data including Gene expression, DNA methylation and miRNA data were collected from the ovarian cancer dataset, obtained from Multi-Omics Cancer Benchmark TCGA Preprocessed Data. After data preprocessing, dimensionality reduction and data integration, each type of omics data were input into both SDAE and LSTM. The performance of both SDAE and LSTM based on multi-omics data were analyzed and compared. From the results, LSTM outperformed SDAE, with higher accuracy and low value of loss.

Comparative Analysis of the Spatial Domain in Digital Image Steganography

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Abstract. Digital steganography is a new and extremely demanding method for transmitting information securely over the internet while empowering a covert device. Since its inception in the 1990s till the present, digital steganography has a lengthy history. Early steganography focused primarily on imperceptibility, security, and embedding capacity. In addition to using statistics as a foundation, convolutional neural networks (CNN), generative adversarial networks (GAN), coverless approaches, and machine learning are all used to construct steganographic methods. Robustness is becoming a crucial component of many innovative techniques. Spatial, Transform, and Adaptive domains serve as the understructure of those novel methods. This broadens the range of steganographic technique development and often concentrates the implementation of adaptive techniques. As a result, this study helps to analyse one of the fundamentals of image steganography, a comparative review on the spatial domain algorithms. As using evaluation tools is strongly tied to the effectiveness of steganography, this study also goes into great detail about its application. The purpose of this research is to determine the best and most effective algorithm among the three competitive spatial domain algorithms, which are Least Significant Bit (LSB), Optimum Pixel Adjustment Procedure (OPAP), and Pixel Value Differencing (PVD) which in regard demonstrated the efficacy of spatial domain algorithms. The resultant results indicate that OPAP is the most efficacious algorithm as it has achieved a high PSNR and low MSE while being able to produce a greater quality stego image with high embedding capacity and imperceptibility.

Comparative Study on Applied Machine Learning in Predicting Reported New Covid-19 Cases in Malaysia

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Abstract. The Covid-19 pandemic has greatly affected the world, including Malaysia. Analysis of the spread of Covid-19 using epidemiological methods is useful for researchers in estimating how the virus might spread, as well as for health agencies in planning effective measures to prevent transmission in the future. Machine learning (ML) techniques have been widely adopted in analyzing and predicting various aspects of the pandemic. In this study, four ML techniques, artificial neural network (ANN), support vector regression (SVR), random forest (RF), and gradient tree boosting (GTB), were applied to predict new cases of Covid-19 in Malaysia. The study aimed to identify which ML model provided the best prediction accuracy for the Malaysian Covid-19 dataset. Experimental findings showed that GTB had the smallest quantitative error values and provided the best predictive capability for new Covid-19 cases. SVR and ANN followed behind, while RF performed the worst. The study concluded that ML models have promising predictive capabilities in analyzing Malaysia's Covid-19 data, and future improvements such as optimization of model parameters are recommended to improve predictive abilities.

Computational Assessment of COVID-19 Time Series using ARIMA Models: Comparative Analysis of New Cases, Vaccination Rates, Booster Doses, and Mortality Trends

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Abstract. The COVID-19 pandemic has had a profound impact on global health and economies, making it crucial to analyze the temporal patterns of key indicators. This research presents a comprehensive time series analysis of COVID-19 data in Malaysia from March 2020 until May 2023, specifically focusing on new cases, vaccination rates, booster doses, mortality rates and ICU patients' trends during pre- and post- vaccination. By employing a time series ARIMA model, the study investigates the interrelationships and dynamics among these variables during the pandemic. The study utilizes publicly available real time dataset from Our World in Data platform that covers a specific timeframe, providing a detailed and comparative analysis of the different variables. The study findings reveal significant correlations between the variables, shedding light on the effectiveness of vaccination campaigns, the impact of booster doses, and their influence on reducing new cases and mortality rates. The mortality rates and ICU patients' count reduces gradually with the implementation of vaccination program. Furthermore, the study explores temporal patterns and identifies potential turning points in the pandemic trajectory, providing valuable insights for policymakers and public health officials. This research contributes to the understanding of the evolving COVID-19 landscape and informs evidence-based decision-making to effectively mitigate the impact of COVID-19 in the future.

Customer Retention towards Digital Payment Platform: A Case of Touch 'N Go

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Abstract. Malaysia has seen a considerable surge in the usage of digital payments platforms for goods and services during the pandemic, notably for eCommerce transactions. The increased popularity of digital payment platforms has been driven by the growing adoption of contactless payment methods. This research is to investigate the most effective factors that help digital payment platforms to retain their customers. Touch 'N Go; a major platform in Malaysia, was used in this research to have a broader understanding from the customer perspective when using the platform. In the rising competitiveness of the digital payment market in Malaysia, it is vital for digital payment platform companies to adopt customer retention strategies in order to sustain. Quantitative method was employed to collect 120 samples from the local users utilising the snowballing sampling technique. SPSS (Statistical Package for Social Science) was utilized to perform data analysis and discern how each factor affects customer retention to the platform. The results indicated that stickiness towards Touch 'N Go is primarily influenced by convenience, security, perceived ease of use and price benefit. The findings of this study carry noteworthy implications for business players, highlighting the key factors they should consider to maintain sustainability within the industry as per exercise by Touch 'N Go.

Customer Satisfaction towards the Application of Artificial Intelligence in E-commerce

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Abstract. The growth of e-commerce is one of the fastest growing distribution methods for business and has significantly changed the operations of retailers all over the world. Innovative solutions and improved consumer experiences are greatly helped by artificial intelligence (AI) in the e-commerce market. Hence, the concept of algorithms and learning technology, which provides a framework for automation are important to AI when it comes to the eCommerce sector. E-commerce use AI and data gathered from customers and company to predict new developments and make informed decisions effectively. This research studies the relationship between AI Shopping Cart, Recommendations System, Chatbots, and Image Search and how they contribute to customer satisfaction. Questionnaire survey was distributed to 200 consumers in Malaysia aged between 18 years old and above. SPSS software was used as the data analysis tool and results from descriptive analysis, reliability test, Pearson correlation coefficient analysis, inferential statistics, multiple linear regression as well as hypothesis testing were considered. The findings revealed that recommender systems and image searches are important elements that contribute to customers satisfaction and customers who are satisfied with the AI functions will continue to use these AI applications. This research provides insights for e-commerce retailers, consumers, and researchers.

Decision Making for IoT Task Offload Scheduling with Edge Computing: A Survey

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Abstract. The The rapid development of Internet of Things (IoT) technologies has resulted in Terminal Devices (TDs) running more software to support ever-increasing functions and services. Due to cost and technical limitations, TDs only have limited computing power and battery capacity, which requires TDs to send computing-intensive tasks to the edge computing network for remote execution based on task offloading technology, thereby reducing TD's computing load and energy consumption. There are a lot of research on scheduling tasks to remote computing nodes in heterogeneous edge networks and cloud platform to achieve optimal matching of computing tasks and computing resources. The scheduling algorithm analyzes the calculation amount of the task, the operation time constraint and the available resource status of the computing network, and then dynamically adjusts the allocation of offloading tasks. However, a complete analysis and review based on the perspective of task offloading decision-making is lacking. This study compares the existing task offloading decision-making methods in the IoT, and analyzes the advantages and disadvantages of various methods and their adaptability to different application scenarios. Thus, a panoramic view of IoT task offloading decision-making methods is given, the deficiencies and challenges of existing decision-making techniques are analyzed, and future research directions are discussed.

Deep Learning For Road Defect Detection From Aerial Imagery

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Abstract. This research highlights the efficiency of YOLO-NAS and Detectron2 algorithms in detecting road defects like cracks and potholes using drone-captured aerial images. YOLO-NAS demonstrates significant accuracy, achieving a mAP score of 71.23% and F1 score of 70.04%, outperforming previous YOLO versions. Detectron2 exhibits an AP score of 55%, surpassing state-of-the-art experiments in coco instance segmentation. Both models display confidence values close to 100%, ensuring reliable object detection. The results show the potential of integrating drone-based inspection systems with deep learning algorithms to improve road safety, reduce manual efforts, and enhance infrastructure management. This approach can contribute to a country's economic and social progress by facilitating efficient road maintenance and defect detection. Future implementations may involve real-time detection using drones for timely road defect assessment and decision-making.

Deep learning-based features extraction for multimodal emotion classification

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Abstract. With the development of information technology, people's expression on the Internet is no longer limited to text, and becomes more rich, so a large number of modal data including text, pictures, audio and video appear. Multi-modal data contains more information than a single mode. Better mining and processing of the information contained in multi-modal, and can help computers to better understand the emotional features of people. Because the multi-modal data shows obvious dynamic time series characteristics, it is necessary to solve the dynamic correlation problem within a single mode and between different modes in the same application scene during the fusion process. In order to solve this problem, based on the common multi-modal data such as text, sound and video, a three-dimensional dynamic extension feature extraction framework (3Dde-Ets) is established, and a multimodal fusion matching framework based on spatial and temporal feature enhancement(Ets-FM) is established, respectively for dynamic correlation within and between modes, and model the short-term and long-term dynamic correlation information between different modes. Based on the framework proposed in this paper, multiple sets of experiments on MOUD and MOSI data sets show that, the emotion recognition model can make better use of the more complex complementary information between different modal data. Compared with other multimodal data fusion models, when the space-temporal attention-based multimodal data fusion framework proposed here applied to multimodal emotion analysis, the emotion recognition rate and accuracy have been significantly improved, so it is more feasible and effective.

Digital Advertising Fraud Predcition Using OLS Regression

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Abstract. Digital advertising has become an essential tool for every business. The digital advertising budget has been increasing over the years. More businesses have turned to digital advertising during the pandemic. However, beginner advertisers might lack knowledge of digital advertising and, at the same time, pour extra capital into it. Furthermore, fraudulent activity in digital advertising is also increasing, which harms the current digital marketing environment, as well as every party involved. This study examines the factors that affect conversion fraud in digital advertising. A sample of 956 observations of computed-generated data is used to examine the variables related to conversion fraud. The results show that advertisers, ad logs, items, goals, and ad slots have a positive relationship with conversion fraud, which these variables determine the digital advertisement fraud. The predicted value for conversion fraud is 0.2936, which 280 of the samples are predicted to be fraud digital advertisement. Implications and recommendations for this research were discussed to facilitate the advertisers in future advertisement placement.

Digitally Transforming Agricultural and Food Market through E-Commerce: An exploratory study in the Malaysian context

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Abstract. The rapid growth of E-Commerce has led to a significant increase in its popularity as a convenient platform for exchanging goods and services, both locally and across borders. However, not all products are suitable for online sales. One of the examples are fresh vegetables, which present a challenge due to the need to maintain their freshness. Factors such as lengthy shipping times and inconsistent temperature conditions during transportation can result in spoilage, reducing consumer interest. This study aims to identify the factors influencing consumers' online purchase of fresh agricultural products, as well as explore the relationship between online purchase intention and the adoption of Agri-food E-Commerce (AE) in Malaysia. Total of 300 set of data are collected through questionnaire surveys, and quantitative analysis were conducted using Smart-PLS. The data collected were analyzed using SPSS for Pearson Correlation Analysis and Multiple Linear Regression. Out of seven hypotheses, three are accepted. This study facilitates meaningful discussions and communication to encourage greater participation and acceptance of all fresh agricultural products. By gaining a better understanding of the balance between supply and demand for fresh agricultural products through E-Commerce, it will be possible to reduce food wastage caused by spoilage and analyze consumption and production patterns.

EEMD-LSTM Modelling of Daily Confirmed COVID-19 Cases in Malaysia

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Abstract. World Health Organization announced the state of pandemic on March 11th, 2020 after confirmed cases of COVID-19 exceeded 118,000 cases in over 110 countries globally. Accurately modelling and forecasting the spread of confirmed and recovered COVID-19 cases is vital to help decision-makers in fighting the pandemic. Usually, patterns exhibited in such scenarios are non-linear in nature and this motivates us to design the system that can capture such changes. This study ultimately aims to create a method to forecast new COVID 19 cases using a hybrid of EEMD-LSTM model. Here, the forecasting is performed onto the number of daily confirmed cases of COVID-19 cases in Malaysia from March 13th, 2020 till January 4th, 2021. The dataset was provided by Global Change Data Lab at Oxford University.

Exploring The Actual Adoption of E-Wallet Among Mobile Phone Users in Malaysia

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Abstract. The E-wallet, also known as a digital wallet, is an application designed to replace physical wallets, with the primary purpose of facilitating online transactions when users wish to make virtual payments. Nowadays, E-wallets are not limited to mobile applications, but they have also been extended to wearable devices, such as smartwatches, enabling users to make payments via their watches. This research study focuses on three main E-wallet service providers in Malaysia, namely TouchNGo E-wallet, Boost, and Grab pay, as they are the top three E-wallets in the country. The objective of this paper is to investigate the actual adoption of E-wallets among mobile phone users in Malaysia, using the Technology Adoption Model. Six independent variables were identified to study the adoption of E-wallets, and a total of 500 respondents shared their opinions on retaining the usage of E-wallet in Malaysia. The data collected were analyzed using SPSS for Pearson Correlation Analysis and Multiple Linear Regression. Out of the six variables, five independent variables were accepted, and one independent variable was rejected due to the greater significant level. The highest correlation coefficient falls under Business Resources with 0.704. The implications and limitations of the study are discussed for the future development of E-wallets in Malaysia.

Exploring the Adoption of Artificial Intelligence in SMEs: An Investigation into the Malaysian Business Landscape

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Abstract. Artificial intelligence (AI) is gradually transforming a wide range of sectors, and small and medium enterprises (SMEs) in Malaysia are also on the rise. Artificial intelligence has the potential to exponentially increase the scale of operations of SMEs, thereby increasing productivity and minimising costs. This paper presents a conceptual framework that aims to explore the adoption of AI in these businesses. These determinants are postulated as independent variables, namely strategic orientation, resources, knowledge, culture and data. The dependent variable in this context is the intention to adopt AI into business operations. To interpret these variables comprehensively, this study uses the Technology Acceptance Model (TAM) and Theory of Reason Action (TRA) which emphasises the importance of technological, organisational and environmental context in the adoption of information technology. By developing and discussing hypotheses within these contexts, this study aims to shed more light on the dynamics that influence SMEs' intention to adopt AI in Malaysia. In doing so, it hopes to provide valuable insights that can help accelerate the adoption of AI in Malaysian SMEs.

Facial Emotion Images Recognition Based On Binarized Genetic Algorithm-Random Forest

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Abstract. Most recognition system of human facial emotions are evaluated in terms of accuracy only, where there are other performance measurements that are considered significant in the evaluation process such as sensitivity, precision, F-measure, and G-mean. Moreover, the most common problem that needs to be solved in face emotion recognition systems is the feature extraction methods, which is similar to the traditional manual feature extraction methods. This traditional method cannot effectively extract features. In this work, a new system to recognize human facial emotions from images is proposed. The Histograms of Oriented Gradients (HOG) is used to extract from the images samples. In addition, the Binarized Genetic Algorithm (BGA) is utilized as a features selection in order to select the most effective features of HOG. Random Forest (RF) is used as a classifier to classify human facial emotions based on the images samples. The facial human images samples have been taken from the Yale Face database, where it consists of 11 human facial emotions which are centre light, glasses, happy, left light, no glasses, normal, right light, sad, sleepy, surprised, and wink. Furthermore, the performance of the proposed system is evaluated in terms of accuracy, sensitivity (recall), precision, F-measure, and G-mean. The experimental results showed that the highest accuracy for the proposed BGA-RF method is up to 96.03%. Besides, the proposed BGA-RF has outperformed its comparatives in terms of accuracy. Based on the experimental results, the proposed BGA-RF method has proved its effectiveness in the identification of human facial emotions based on images.

Fault Classification Algorithm for Internet of Things Devices Based on Deep Learning

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Abstract. With the growing impact of Internet of Things devices on various aspects of society, it has become crucial to predict their future status accurately, as sudden failures can lead to significant losses. At present, deep learning has shown great potential in establishing fault predictive models, and it has become a prevalent research area. However, most of the existing algorithms have focused on regression methods, and only a limited number of algorithms utilize classification approaches. Therefore, this paper aims to address this gap by developing a fault classification algorithm for prediction. Long Short-Term Memory (LSTM) and Temporal Convolutional Network (TCN) are two of the most commonly applied deep learning models in the area of fault prediction. LSTM, equipped with memory units and gating mechanisms, excels at capturing long dependencies. On the other hand, TCN utilizes dilated causal convolution, allowing it to gradually expand its receptive field and capture time dependencies when processing time series data. The proposed hybrid classification algorithm effectively combines the strengths of LSTM and TCN. LSTM is employed to process long dependencies in the time series data. TCN is then utilized for fault prediction, leveraging its ability to identify anomalies based on the extracted features. A fully connected layer is applied when converting the output of TCN into corresponding categories. In this work, the C-MAPSS dataset is used to analyze the performance of the proposed hybrid fault classification algorithm. The results demonstrate that the hybrid algorithm outperforms LSTM and TCN methods, showcasing better performance in fault classification.

Flower Pollination Algorithm for Dynamic Task Scheduling In Edge-Cloud Continuum

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Abstract. In response to advancements in virtualisation technologies, such as containers and virtual machines, the adoption of data-driven methodologies, and the emergence of software-defined networking technologies, such as data plane programming, a new emphasis on integrating computation and communication in distributed systems has emerged. Consequently, this has led to edge-cloud continuum computing to emerged because of the rise of edge computing as a supplement to and sometimes even a replacement for traditional cloud services. Because networking and computers have always evolved separately, combining the two is a challenge. Task scheduling is one of the challenges encountered in an edge-cloud continuum computing environment. In this case, determining where applications (Tasks) should be executed is crucial for meeting the quality of service needs of the applications. Therefore, an edge-cloud system needs a powerful task scheduler to determine the optimal locality (edge, cloud, or both) for task execution. An efficient scheduling strategy must be used to ensure that the workloads allocated to the virtual machines in the edge-cloud continuum datacentre are distributed to fulfil the Quality of Service (QoS) (e.g., time, cost, latency, minimum bandwidth) requirements of all users. QoS is an important problem for both resource providers and mobile consumers. It's obvious that there is no research that presented an ideal task scheduling algorithm on an edge-cloud continuum that efficiently solve the QoS requirements for both customers and providers. In this research, we employ the potentials of the metaheuristic flower pollination algorithm (PFA) in solving task scheduling problems in an edge-cloud continuum environment. Simulation results show that FPA performs better over the famous PSO with significant improvements in terms of makespan time especially when the number of tasks grows higher.

Global Social Media Addiction: The Moderators Effect of Demographic

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Abstract. Social media addiction defined as being too worried about social networking sites and visiting it frequently on a daily basis in which this behavior started to interfere with one's social activity, interpersonal relationship and mental health as well as general wellbeing. Against these backgrounds, this study aims to determine the factors which would affect one's addiction level in social media. Besides, this study aims to identify does the demographic factors of an individual affect their level of addiction towards social media. The Pew Research Centre provided a total of 1502 sets of sample data for analysis. The results show that the type of connection, cost of connection, and social networking sites may all have an impact on a person's level of addiction. Also, the result asserted that female, individual with lower education level and individual with lower income level are prone to have social media addiction. The results of this study have made some essential contributions to the literature on the understanding of social media addiction in terms of insights and consequences.

Goal-Setting Theory and Gamification in Mobile Fitness Application: A Measurement Items Analysis

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Abstract. Research efforts at the items development of Goal Setting Theory with gamification have received less attention among scholars especially in mobile fitness application context. The possible reason for this deficiency is the lack of measurement analysis tool and ideas of Goal Setting Theory and gamification from mobile fitness application context. Therefore, the aim of this paper was to develop a scale of measuring Goal Setting Theory and Gamification items based on its conceptualization. Data collected from a survey of fitness centres that used the mobile fitness application, from which 349 respondents filled out questionnaires for this study. The analysed data using the structural equation model (SEM) and, specifically, the partial least square structural equation modelling for the measurement items. The results show that 30-items of this paper have passed the measurement items test requirement used for structural model testing. The research is expected to extends the knowledge frontier of Goal Setting Theory and gamification items and provides a tool for further investigation for academics and fitness practitioner.

Graph Analytics' Centrality Measurement in Supply Chain

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Abstract. This paper reviews the importance of graph analytics in the supply chain field from a centrality measurement perspective. In graph analytics, centrality measurement usage is vital to find the most critical nodes in a graph. The centrality helps identify the essential factors that influence suppliers or companies' management for relative measure within a networked economy. Four main issues are affecting the supply chain were addressed based on the three types of supply chain models (Traditional Supply Chain, Modern Supply Chain and e-Supply Chain), which have implemented nowadays. Several centrality measurements were indicated in this paper, referring to the previous studies that had successfully realized the supply chain models applications. The impact of centrality measurements brings a significant improvement in supplier-customer relationship, cost effectiveness, risk management and dynamic and fast-changing time-varying market conditions.

Hexa-Net: ADHD-specific Brain Functional Reference based on Evaluation of Spatiotemporal Variability to Six Resting-State Networks

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Abstract. Early identification of Attention-Deficit/ Hyperactivity Disorder (ADHD) is imperative for individuals with this disorder to manage their challenges and improve their quality of life effectively. However, the neural mechanisms and brain network changes underlying ADHD are not yet fully understood. The Human Brain is functionally organized by brain patterns that have spatially distinct but functionally connected that were discovered at rest, known as Resting-state networks (RSNs). Resting-state functional magnetic resonance imaging (rs-fMRI), is an incredible tool that advanced us with detailed insight into those RSNs. Researchers use brain atlases to define RSN nodes for further analysis. Unfortunately, most atlases rely on data from healthy individuals, leading to inconsistencies and a lack of disease-specific atlases tailored for populations with specific medical conditions. Researchers have started developing disease-specific brain atlases or modifying existing ones to represent the disease-specific brain connectivity patterns better. To address the mentioned gaps, this study introduces "Hexa-Net" ADHD-specific brain reference after (1) generating a Master spatial atlas after conducting a systematic comparison of five priori brain atlases and six Network-of-Interests (NoIs) that are frequently referenced in ADHD literature: (Auditory- (AUN), Cognitive Control- (CCN), Dorsal Attention-(DAN), Default Mode-(DMN), Sensorimotor-(SMN), and Ventral Attention-(VAN)) Networks, resulted in overall spatial overlap ranges from (30-97%) across them. (2) demarcating NoIs after measuring the spatial distribution and temporal dynamics of NoIs quantified by the ADHD-200 dataset. Findings reflect a high correlation between the spatial composition of the six RSN associated with Functional Connectivity. Hexa-Net may serve as a valuable tool for future ADHD studies.

Imbalanced Data Handling Techniques for Classification: A State-of-the-art Review

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Abstract. Imbalanced data in one of the major problems faced by Machine learning and deep learning classifiers. The skewness in the data distribution limits the performance of classifiers. It leads to overfitting of the model and misclassification for minority classes. Researchers have been focused on new techniques to balance data by oversampling minority classes, undersampling majority classes or creating a hybrid of oversampling and undersampling to resolve the issue. Over the years researchers have also explored algorithmic techniques to adjust weights, create bags of classes and optimally enhance the data. This paper provides a state-of-the-art review of the latest contributions to resolve the imbalance data problem. The major focus of this paper is on the hybrid techniques, ensemble methods and GAN-based data augmentation techniques.

Lateral Cephalogram Contour Transformation Framework for Skeletal Malocclusion Classification

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Abstract. Skeletal malocclusion is a condition where the teeth of the closed jaw are misaligned or incorrectly placed. This condition requires several pre-processing methods, namely Geometric Morphometric (GM), which uses several layers of statistical analysis and manual landmarking. This could lead to bias in labelling data into the correct class. In this paper, we propose a transforming technique that is used to convert lateral cephalogram images into black-and-white contour images by eliminating unnecessary features and highlighting more of the shape feature. Besides that, class activation mapping (CAM) is also used to validate features that are involved in the CNN process. Using the proposed contour transformation, the result obtained is slightly better than the original lateral cephalogram. The result also showed that by using a contour image, precision is also improved. By reducing the image to a contour image, unnecessary features are also eliminated, which gives the model a more direct feature to focus on. However, if more datasets are available for training, CNN performance can be improved.

Methods for Intravascular Optical Coherence Tomography Analysis of Coronary Plaques: A Review

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Abstract. Coronary Artery Disease (CAD) is one of the more lethal and morbid diseases worldwide, which is caused by the accumulation of coronary atherosclerotic plaques in the walls of coronary vessels. Intravascular Optical Correlation Tomography (OCT), a mainstream imaging technique, aids physicians in treatment and diagnosis by visualizing the geometry and size of plaque in the lumen as well as the microstructure of the vessel wall. Since this technique requires manual labeling and relies on the subjectivity of doctors, many scholars have applied advanced techniques such as deep learning and traditional machine learning to the analysis of plaques and achieved good results. In this survey, we mainly review the methods related to coronary artery lumen segmentation, coronary atherosclerotic plaque segmentation, and classification. Compared with the literature reviews in this field of coronary artery disease, this review summarizes the OCT-based methods in coronary artery disease and their advantages and disadvantages more comprehensively and describes the current problems and future directions in this field. However, the lack of publicly available datasets in the field has limited the development of the field by preventing researchers from comparing their experimental results with others, in addition to the fact that there are very few literature reviews based on OCT techniques. Therefore, the main objective of this paper is to help researchers and beginners get inspired in analyzing and studying coronary artery images using OCT techniques

MEvalS: A Model on Evaluation of Skill-based e-Learning System

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Abstract. Skill-based e-learning system is increasingly popular in the TVET education. There is a lack of study on evaluation of skill-based e-learning system. Therefore, the focus of this study is on evaluation of skill-based e-learning system. Various studies have been conducted for the skill training evaluation in terms of effectiveness on the training program or system, however most of the evaluation is focused on industrial training program. This study is focused on available models for skills-based assessment. From this, the closest and most consistent model to the model that can be used for skills-based assessment have been identified. The aim for this research is to propose a model on the evaluation model for skill-based e-learning system called MEvalS. MEvalS is an enhanced evaluation model on skill-based e-learning system adopted from Kirkpatrick model, that transforms existing model into a model that fits in to skill-based e-learning system. The modification was done at the behavioural level in the Kirkpatrick model to suit the assessment on the training skill-based e-learning system more systematically. The research has contributed further to the evaluation on skill-based e-learning system, especially in TVET education field.

Oil Spill Classification Based on Satellite Image Using Deep Learning Techniques

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Abstract. An oil spill is a leakage of pipelines, vessels, oil rigs, or tankers that leads to the release of petroleum products into the marine environment or on land that happened naturally or due to human action, which resulted in severe damages and financial loss. Satellite imagery is one of the powerful tools currently utilized for capturing and getting vital information from the Earth's surface. But the complexity and the vast amount of data make it challenging and time-consuming for humans to process. However, with the advancement of deep learning techniques, the processes are now computerized for finding vital information using real-time satellite images. This paper applied three deep-learning algorithms for satellite image classification, including ResNet50, VGG19, and InceptioV4; They were trained and tested on an open-source satellite image dataset to analyze the algorithms' efficiency and performance and correlated the classification accuracy, precisions, recall, and f1-score. The result shows that InceptionV4 gives the best classification accuracy of 97% for cloudy, desert, green areas, and water, followed by VGG19 with approximately 96% and ResNet50 with 93%. The findings proved that the InceptionV4 algorithm is suitable for classifying oil spills and no spill with satellite images on a validated dataset.

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Performance Evaluation Task Scheduling Rule Based Algorithms in Datacenter using CloudSim

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Abstract. Cloud computing is a relatively new way of utilizing online resources, and it's growing increasingly popular. The cloud could have very strong traffic at times and very low traffic at other times. Scheduling algorithms are essential to the process. The cloud computing issue is affected by causative factors, such as execution time, end time, waiting, and average waiting. However, the number of jobs in cloud environments is effectively impacted by the algorithms' higher latency and rapid response times. The research aims to improve the accuracy of task finishing time and waiting time by minimizing waiting time and execution times. The algorithms were elaborated, compared, and evaluated in terms of execution time, end time, waiting time, and average waiting time. The dataset was coded using the Java programming language and inserted into the simulation tools. The result was achieved in terms of execution time, completion time, and waiting time using the simulation tool Cloudsim in the comparison program, the Eclipse program. Compare the average waiting time between the SJF, FCFS, and RR algorithms. The SJF algorithm has the lowest rate, rather than Findings also proved that the SJF algorithm was the most effective over other alternative algorithms.

Pioneering the Digital Marketplace: A Study on the Adoption of Social Commerce among Micro Enterprises in Malaysia

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Abstract. The study investigated the implementation of social commerce within micro, small, and medium enterprises (micro-SMEs) through the application of the collaborative model encompassing the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). This research examines the occurrence of limited adoption of social commerce among micro-SMEs and subsequently evaluates the influence of social commerce on their business performance. A total of 450 questionnaires were disseminated among business owners located in the Klang Valley, Penang, and Johor Bahru regions. The data was analyzed using the Structural Equation Modeling (SEM) technique. The results of this study indicate that perceived usefulness, subjective norm, trust, and readiness play significant roles in influencing the adoption of social commerce. The utilization of user experience served as a moderating factor in shaping attitudes towards the adoption of social commerce. This study contributed to the existing theory by incorporating the extended Technology Acceptance Model (TAM) with the Theory of Planned Behavior (TPB) and additional elements. This integration enhanced our understanding of the factors influencing technology adoption, as well as the underlying motivations driving such behaviour. In the past, these models are often applied separately.

Prioritized Text Detergent: Comparing Two Judgment Scales Of Analytic Hierarchy Process On Prioritizing Pre-Processing Techniques On Social Media Sentiment Analysis

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Abstract. Most companies use social media data for business. Sentiment analysis automatically gathers analyses and summarizes this type of data. Managing unstructured social media data is difficult. Noisy data hinders sentiment analysis. Processing big social media data is difficult. Over 50% of sentiment analysis is data pre-processing. If pre-processing is carried out correctly, data accuracy may improve. Also, sentiment analysis workflow is highly dependent. Because no pre-processing technique works well in all situations or with all data sources, choosing the most important ones is crucial. Prioritization is an excellent technique for choosing the most important ones. As one of many Multi-Criteria Decision Making (MCDM) methods, the Analytic Hierarchy Process (AHP) is preferred for handling complicated decision-making challenges using several criteria. The Consistency Ratio (CR) scores were used to examine pair-wise comparisons to evaluate the AHP. This study used two judgment scales to get the most consistent judgment. Firstly, the Saaty judgment scale (SS), then the Generalized Balanced Scale (GBS). It investigated whether two different AHP judgment scales would affect decision-making. The main criteria for prioritizing pre-processing techniques in sentiment analysis are Punctuation, Spelling, Number, and Context. These four criteria also contain sub-criteria. GBS pair-wise comparisons are closer to the CR value than SS, reducing the alternatives' weight ratios. This paper explains how AHP aids logical decision-making. Prioritizing pre-processing techniques with AHP can be a paradigm for other sentiment analysis stages. In short, this paper adds another contribution to the Big Data Analytics domain.

Qin Character Recognition Using Hybrid HOG Feature and SVM Model

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Abstract. This paper discusses a modified character recognition model using the HOG features and SVM to recognize the Qin bamboo slip handwriting accurately on a obtained small and imbalanced dataset. Firstly, a sample dataset of Qin bamboo slip images is established, and Gaussian filtering is applied to remove image noise. Subsequently, the gamma transformation algorithm is utilized to adjust the image brightness while enhancing the contrast between the text and image background. After a series of pre-processing operations, the histogram of oriented gradients (HOG) features of the images are extracted. During the model training process, different weights are assigned to classes with varying sample quantities to address the issue of class imbalance and improve the model performance. The results reveal that the accuracy of the model on the test data reaches 97.73%

Reliable Lightweight Straggling Task Detection

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Abstract. One of the most difficult issues in using MapReduce for parallelizing and distributing large-scale data processing is detecting straggling tasks. It is defined as recognising processes that are operating on weak nodes. When two steps in the Map phase (copy, combine) and three stages in the Reduce phase (shuffle, sort, and reduce) are included, the overall execution time is the sum of the execution times of these five stages. The main objective of this study is to calculate the remaining time to complete a task, the time taken, and the straggler(s) detected in parallel execution. The suggested method is based on the use of Progress Score (PS), Progress Rate (PR), and Remaining Time (RT) metrics to detect straggling tasks. The results obtained have been compared with popular algorithms in this domain such as Longest Approximate Time to End (LATE) and Maximum Cost Performance (MCP), and it has been demonstrated to be capable of detecting straggling tasks, reliably, estimating execution time, and supporting task acceleration.

Resonance Mechanism Analysis and Resonance Suppression of LLCL Type Photovoltaic Grid connected Cluster System

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Abstract. A resonance problem in the cluster system of string-type photovoltaic cluster using LLCL type inverters, this paper analyzes the resonance mechanism of the cluster system and proposes a method to suppress global resonances. Analyzes and discusses two aspects of passive damping global resonance suppression and active damping resonance suppression. The passive damping method is mainly realized by connecting appropriate resistors in series or in parallel with the LC filter branch. The active damping method, both the feedback of capacitor currents and the feedforward of common connection point (PCC) voltages are added to the conventional double closed-loop control. Through simulation, it is shown that the output current waveform of the system has been improved by adding active damping global resonance suppression, and the generation of resonance peaks has been effectively suppressed.

Searching for Optimal Pretrained Model for solving a Medical Image Classification Problem

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Abstract. This study is devoted to solving the problem of multiclass classification of medical images using Deep Learning. An analysis of the effectiveness of the most common pre-trained models was carried out. Transfer learning was chosen as the methodology. The article presents a description of the VGG-19, ResNet-50, InceptionV3 models and their comparative characteristics. The dataset for this study consisted of chest X-Ray images sourced from prominent healthcare organizations in the field, including the Society for Imaging Informatics in Medicine. Additionally, the dataset received contributions from the Foundation for the Promotion of Health and Biomedical Research of Valencia Region, the Valencian Region Medical ImageBank, and the Radiological Society of North America. Notably, the ResNet-50 based model demonstrated the highest performance, achieving an impressive accuracy of 82.74%. The results obtained for all models are reflected in the respective tables. The practical significance of the study is that the results obtained can be used to speed up the process of diagnosing medical diseases.

Stay Loyalty? An Exploratory Study of Consumers' Online Repurchase Intention in Malaysia

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Abstract. This study delves into the determinants shaping consumers' intentions to repurchase online during Malaysia's National Recovery Plan, established in response to the Covid-19 crisis. Rooted in the Technology Acceptance Model (TAM), the research expands its scope to encompass additional variables: perceived security, usefulness, value, trust, and reputation. Employing a quantitative approach, data was collected from 250 respondents through online surveys. The results underscore the positive and statistically significant connections between perceived security, usefulness, and value with repurchase intentions. However, trust does not exert a substantial impact. On the contrary, firm reputation emerges as a robust predictor of repurchase intentions. The implications highlight the imperative of bolstering perceived security, usefulness, value, and reputation to foster customer loyalty and promote recurrent buying behavior in the online sphere. Policymakers are advised to prioritize measures that enhance trust and ensure the protection of customers' personal data, thereby stimulating the expansion of e-commerce in Malaysia. Despite limitations, this research provides valuable insights for practitioners and policymakers striving to enhance customer retention and satisfaction within the digital economy, particularly amid challenging circumstances such as the Covid-19 crisis.

Systematic Literature Review: Learning Analytics Framework for Online Education

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Abstract. Learning analytics (LA) has grown into a phenomenon with extensive applications in a variety of educational contexts. Diversity of applications such as LA framework and the need for a deeper comprehension of the practical implementation of the LA framework in the context of online education present a necessity. This article explores the practical implementation of LA in online education within the phases associated in LA framework (descriptive analytics, diagnostic analytics, predictive analytics and prescriptive analytics). This article examined the significant outcomes, and the kind techniques that support each phase. By adhering to established guidelines and employing guidelines and employing systematic literature review method, including problem formulation, search strategy, article selection, data extraction, and synthesis, this review provides helpful insights for refining the implementation of LA in educational settings. With 38 relevant publications, this article sheds light on the effectiveness and impact of LA phases particularly in online education.

Teachers' Perception On Using Cloud Based Technology And Augmented Reality In Higher Education

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Abstract. Learning improvement can be achieved when the content of a course is delivered based on a suitable approach supported by the integration of technology. This integration is based on the Technological Pedagogical Content Knowledge (TPACK) model, but lack of training that emphasizes the use of technology in the current context can lead to unwillingness of educators in integrating technology into their teaching plan. Therefore, a training module based on the experiential learning model for integrating advanced technology in education, like cloud based tools and augmented reality is needed for educators in higher education. As such, in line with Kolb's experiential learning theory, the current study develops an educational technology and augmented reality learning module, to be conducted for educators in higher education institution. In a case study conducted in a classroom, 15 educators participated in the learning activity using formative assessment approach and cloud based tools, which includes educational technology (EdPuzzle, Nearpod, Socrative, Formative, Kahoot, andQuizziz) as well as augmented reality (HP Reveal). The results from the case study indicated that, the module successfully received positive responds for engagement, interaction, competency and interest. The module also improved knowledge and skills among participating educators. Hence, the use of cloud based tools for advanced educational technology in learning module based on experiential learning theory increases educators' readiness and perception towards integrating technology in their teaching plan. This can support the aim to promote active learning in higher education for increased interest and positive attitudes towards learning in both students and educators.

The Effectiveness of Computer Assisted Learning Platforms on Students' Learning: Amid Covid-19 Pandemic

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Abstract. This study is a depiction of computer assisted learning platforms adopted by Universiti Teknologi MARA for the teaching and learning process during the outbreak of novel coronavirus disease beginning the year 2020. The intended purpose of this paper seeks to address the effect of different computer assisted platforms on students' performance, and particularly exploring which of the platforms would give a better learning experience to students in terms of student's ability to perform in assessment amid the Covid-19 pandemic. The study was carried out to explore four medium of learning platforms: micro-teaching through Telegram, online meeting through Google meet, reading slide presentation, and recorded narrative video presentation. The paper employs a quantitative approach to study the effect of different online learning platforms on students' performance and highlighted the assessment process's implementation during the lockdown period. The contribution of this paper is to draw a picture of computer assisted learning approaches during the Covid-19 pandemic and which learning platform is better for teaching and learning, and how it has a different effect on students' performance. Results obtained from a survey of four groups of students learning Discrete Structure subject shows that teaching and learning on different platforms significantly affect students' score and narrative recorded video is recorded as better than other learning platforms.

Towards Sustainable Consumer Mhealth Apps Adoption: Perceived Risks Versus Organizational Facilitators Review

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Abstract. Mobile Health (Mhealth) apps services for health behavior rehabilitation have become a demand in healthcare and medical segments. However, Mhealth apps' poor adoption and high rate of discontinuation may occur due to risk perception of those apps. This review paper introduced perceived risks of Mhealth apps and proposed the role of the organizational facilitators that could tackle or reduce the impact of risk perception among consumers while using Mhealth apps. The review paper used a literature review from 4 databases and included 16 articles to analyse diverse risks types that may consumers perceived in the initial utilization stage for Mhealth apps. Despite few studies have deliberated the organizational facilitators (Endorsement, Awareness, loyalty, cost, facilitating condition, regulation, and data protection), there is a need to explore those facilitators in different Mhealth apps and population composition.

Valuation of Software Product: A Systematic Literature Review

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Abstract. Software valuation is a complex analytical process that determines the value of software product as intellectual property or an asset for software companies. However, the intangible nature of software makes it challenging to appraise using traditional calculation methods. This study presents a systematic literature review (SLR) conducted to identify suitable valuation approaches for software. The SLR examined existing research on software valuation, resulting in the identification of key methodologies and insights. By synthesizing the literature, this review sheds light on the significance of utilizing appropriate software valuation methods in software businesses. Moreover, it highlights the emerging issues and provides valuable recommendations for future research in the field of software valuation. This review illustrates the importance of addressing the complexities of software valuation and sets the stage for further exploration and development of effective valuation approaches.

Video Forgery Detection Via Deep Learning Semantic Segmentation Architecture

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Abstract. Video forgery has recently emerged as a global problem thanks to the development of sophisticated and user-friendly video editing tools and software. In our research, an end-to-end deep learning architecture is introduced to detect the forged object in the video. This architecture is inspired by the recent progress of deep learning in image and video semantic segmentation. To distinguish fake objects from background images, we suggested a semantic segmentation technique. Our suggested architecture, which combines the U-net and VGG19 architectures based on Convolutional Neural Networks (ConvNet), is capable of differentiating between a forged object and its background, even though the model was trained on a small sample size of data. Additionally, we decreased the number of channels in every network layer, which reduced the computational complexity of our suggested approach without compromising performance. In 10 videos, we used the chroma-key composition and splicing forgery methods to assess how well the proposed architecture performed. Mean intersection over union (mIoU), as opposed to traditional classification metrics, was used to assess the performance of the suggested method. According to the experiment, the training and validation sets for our proposed method both scored 0.9343 for mIoU accuracy, which is the highest.

Thank You!