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CONFERENCE ON BUSINESS SOCIAL SCIENCE AND TECHNOLOGY 2024

25 Sept 2024

Editors

Yogan Jaya Kumar

Norharyati Harum

Erman Hamid

Empowering Connections:

Exploration on Synergies Across ICT,
Science & Engineering, Education,
Tourism, Social Sciences, and TVET

Abstract Book



Conference On Business, Social Science And Technology (CoNeSciNTech2024)

Abstract Book

25 September 2024

Edited by

Yogan Jaya Kumar
Norharyati Harum
Erman Hamid

TABLE OF CONTENTS

Preface	5
Organizing And Technical Committee	6
1 Assessing The Effectiveness Of Hydrogo Mobile Application Model According To User Perceptions <i>Herman, Muhammad Ilham</i>	7
2 Comparative Study On The Usability Of Network-Learning Tools <i>Erman Hamid, Norharyati Harum, Nazrulazhar Bahaman, Nurul Azma Zakaria, Najwan Khambari</i>	8
3 Why Do Players Feel Fear When They Play Horror Games? A Case Study Of Late Night Mop <i>Diny Anggraini Adnas, Valentino Chen</i>	9
4 A Review: Human-Centric Approaches, Technologies, And Cultural Influences For Industry 5.0 <i>Tia Tanjung, Ihwan Ghazali, Wan Hasrulnizzam Wan Mahmood, Taqwan Thamrin, Robby Yuli Endra, Najwan Khambari, Safarudin Gazali Herawan</i>	10
5 Portable Offline Multi-Language Reading Assistant For Visually Impaired <i>Kirubaashini Selvakumar, Norharyati Harum</i>	11
6 Radish Planting Monitoring System <i>Adib Farhan Zakaria, Norharyati Harum, Erman Hamid</i>	12
7 Implementation of Find Your Pawfect Buddy for Stray Animal Shelter Management <i>Fathin N. M.Leza, Quah Jia Yong</i>	13
8 Optimizing Childcare Management With Data Automation, Analytics, And Cloud Backup Through Kidbuddy Management System <i>Nur Adlina Najwa Razali, Nur Atikah Arbain, Norharyati Harum</i>	14
9 Hybrid Security Of E-Authentication System Using QR Code And Push Notification For Library Entry Pass <i>Muhammad Fahmi Bin Shahbuddin, Muhammad Shahkhir Bin Mozamir</i>	15
10 Smart Stick For Elderly And Visual Impairment Person With Location Detector <i>Amni Farzana Azmi, Norharyati Harum, Erman Hamid</i>	16
11 Impact Of Environmental Noise On The Performance And Robustness Of The Improved GbLN-PSO Algorithm In WSN <i>M. Shahkhir Mozamir, Nurhashikin, Noor Hafizah Ismail</i>	17
12 Data Quality In Iot Open Datasets: A Methodological Review <i>Siti Noor Basirah binti Md Isa, Nurul A. Emran</i>	18
13 Development Of e-Parcel Management System Prototype For Mail Unit At Higher Institutions <i>Fatin Nur Syamimi Ismaroni, Syahida Mohtar</i>	19
14 Design And Implementation Of A Campus-Wide Freecycle System At UTeM For Sustainable Resource Sharing <i>Hani Mastura Ruslan, Norashikin Ahmad</i>	20
15 Predictive Maintenance Model For Manufacturing Industry <i>Kishen Ramadasan, Yogan Jaya Kumar, Ariff Idris</i>	21
16 Explainable AI In Biochar Yield Prediction Models <i>Surend Esvaran, Yogan Jaya Kumar, Ariff Idris</i>	22

17	Energy-Efficient Device Discovery Optimization In 5G D2D Communication Using Adaptive Algorithms And Proximity Services <i>Irfan Azman, Aslinda Hassan</i>	23
18	Development Of Smart Waste Management System <i>Harnisha Prasanna Kumar, Norharyati Harum, Nur Atikah Arbain</i>	24
19	Logistics Management System (LMS) Using Optical Character Recognition (OCR) For Cement Industry <i>Wong Yi Xuan, Nurul A. Emran, Chu Lee Fang</i>	25
20	Review Of Multifactorial Optimization Approach In Software Testing <i>Haw Yuan Kang, Raja Rina Binti Raja Ikram, Nurul Akmar Binti Emran, Kamal Zuhairi Zamli</i>	27
21	The Impact Of Entrepreneurship Incubator On Shaping Students Career Choices Towards Entrepreneurship <i>Rusmaini binti Ramly, Rabi'ah binti Seman</i>	28
22	Proficiency Levels In Using Digital Platforms Among Polytechnic Students And Their Inclination Towards Entrepreneurial Careers <i>Rabi'ah binti Seman, Rusmaini binti Ramly</i>	29
23	Artificial Intelligence For Animal Welfare: A Paradigm Shift In The Halal Meat Industry <i>Zahirah Azmar, Zeiad Amjad Aghwan</i>	30
24	Chargesync: An Integrated Mobile Application For Smart Electric Vehicle (EV) Charging <i>Sean Eddy Effie Rizal, Noor Hafizah Ismail, Muhammad Shahkhir Mozamir, Mohammad Zahiruddin Ibrahim</i>	31
25	Leo Astrocast Satellite Tracking System <i>Shaniza Sharan, Siti Rodhiah Mohd Yunus, Maharani Mohd Haled, Mohd Hapez Johari, Mohammad Jailani A Jamil</i>	32
26	Developing A Customised ROV Technological Application For Local Industry Used To Boost The Economy Of Brunei Darussalam <i>Muhammad Safwan bin Mohammad Sofian, Abdul Hafidz bin Haji Omar</i>	33
27	Women In Business And The Changing Drifts Of Environmental Future: A Malaysian Perspective <i>Hemavathi Gunasegaran</i>	34
28	Efficient Donation, Sustainable Impact: Unveiling The Clothes Recycle Management System <i>Nur Salihah Husna Binti Abdul Rahim, Hidayah Binti Rahmalan</i>	35
29	Optimized Web Platform For Managing Credit Transfers In Direct-Entry Programs <i>Hidayah Binti Burhannudin, Hidayah Binti Rahmalan</i>	36
30	Design And Development For School Co-Curriculum Management System <i>Nur Aqilah Humaira' Binti Imran, Hidayah Binti Rahmalan</i>	37
31	Smart Detection: Image Processing For Plant Leaf Classification <i>Siti Nadzirah Mohamed Radzwan, Nurul Azma Zakaria, Zaheera Zainal Abidin, Fairul Azni Jafar</i>	38

Preface

We are pleased to present the proceedings of the Conference on Social Science, Business and Technology (CoNeSciNTech 2024), held on 25th September 2024. This international conference, hosted by Universiti Teknikal Malaysia Melaka (UTeM) in collaboration with Universitas Internasional Batam (UIB), serves as a platform for scholars, researchers, and practitioners from diverse disciplines to exchange knowledge, insights, and innovations across the fields of social science, business, and technology.

The papers' abstracts compiled in this volume reflect the dynamic interplay of these fields and demonstrate the importance of interdisciplinary approaches in addressing contemporary challenges. From business strategies in the digital age to the technological innovations shaping society, the discussions at CoNeSciNTech 2024 foster an environment for fresh perspectives, collaborative solutions, and thought-provoking debates.

We extend our deepest gratitude to all the participants, speakers, and contributors for their invaluable input, as well as to the organizing committees from both UTeM and UIB for their dedication and hard work in making this conference a success. We hope that this collection will not only serve as a record of the academic dialogue from the conference but also inspire continued exploration and collaboration in the years to come.

Sincerely,

The Organizing Committee

Conference on Social Science, Business and Technology (CoNeSciNTech 2024)

25 September 2024

Universiti Teknikal Malaysia Melaka

Universitas Internasional Batam

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ASSESSING THE EFFECTIVENESS OF HYDROGO MOBILE APPLICATION MODEL ACCORDING TO USER PERCEPTIONS

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Abstract

This research aims to evaluate the effectiveness of HydroGo, a mobile application that simplifies the ordering and delivery of water gallons online. The identified issue is the slow and unorganized process of ordering water gallons using traditional methods. The goal of this study is to understand the extent to which HydroGo improves user efficiency and satisfaction. The methods used include surveys, interviews, and observations of the app's users. The research results show that the application significantly enhances the operational efficiency of water gallon depots and improves user experience. This study offers recommendations for further development of similar applications in the MSME sector.

Keywords:

Android, Mobile Application, Water Gallon Delivery, Interview, Observation

COMPARATIVE STUDY ON THE USABILITY OF NETWORK- LEARNING TOOLS

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Abstract

This study explores various network-learning tools used in networking education, comparing their features, usability, and effectiveness. Network learning tools such as Wireshark, Packet Tracer, and GNS3 play a crucial role in teaching network concepts, helping students and professionals develop practical skills in network configuration, monitoring, and troubleshooting. This article presents a comparative analysis of these tools, focusing on their usability, educational value, and impact on learning outcomes. This paper reviewed the existing research related to Network Learning Tools, Usability and Network Simulation; intended to ('1') identify the tools that being used in networking learning, ('2') constructing content analysis in finding the effectiveness element of networking learning tools and ('3') confirm findings '2' by testing the usability of networking learning tools.

Keywords:

Network Learning Tools, Usability, Network Simulation

WHY DO PLAYERS FEEL FEAR WHEN THEY PLAY HORROR GAMES? A CASE STUDY OF LATE NIGHT MOP

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Abstract

Horror is a genre of media that is created with the purpose of scaring people. Despite it being a part of our survival instinct, a lot of people enjoy feeling scared for numerous reasons. Games are a bit more unique when it comes to applying horror, as they have an active form of engagement. While horror is one of the most interesting genres, it is also one of the most difficult to pull off correctly, especially when it comes to games. Therefore, this research aims to figure out the reason why players feel fear when they play horror games along with the factors that affect said fear. This research is conducted through experiment by playtesting and qualitative by interviews with 30 respondents. The data analysis is done by using the Likert Scale. Based on the results of this research, it is shown that the factors that affected players' fear are the visual, audio, and mechanics of a horror game. Therefore, it can be concluded that players are more likely to experience fear when the visual, audio, as well as mechanics of the game are balanced, used, and placed accordingly in order to induce the most fear out of the players.

Keywords:

Horror Games, Playtest, Game Design, and Fear

A REVIEW: HUMAN-CENTRIC APPROACHES, TECHNOLOGIES, AND CULTURAL INFLUENCES FOR INDUSTRY 5.0

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Abstract

This paper explores human-centric approaches and technologies, along with cultural influences, within the framework of Industry 5.0. The study aims to identify and assess the significant role of integrating human values and cultural dimensions in the transition to Industry 5.0. The review primarily focuses on examining the latest technological innovations that enhance deeper human engagement within industrial systems. Additionally, it evaluates how cultural factors can influence the deployment, success, and impact of these technologies. However, analyzing the intricate interplay between technology, human-centric approaches, and cultural influences provides a through understanding of how to optimize industrial outcomes across diverse global contexts and offers recommendations for more effective and inclusive implementation.

Keywords:

Human-Centric Approaches, Technologies, Cultural Influences, Industry 5.0, Technological Innovations

PORTABLE OFFLINE MULTI-LANGUAGE READING ASSISTANT FOR VISUALLY IMPAIRED

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Abstract

This research addresses critical deficiencies in current assistive reading technologies for visually impaired individuals, which primarily rely on cloud-based services like Google Cloud Vision and Text-to-Speech APIs. While these services offer advanced capabilities, they entail high operational costs and depend on continuous internet connectivity, limiting their usability in areas with unreliable or absent internet access. This study proposes an innovative offline reading device utilizing a Raspberry Pi 4, a 1080p USB webcam, and the Tesseract OCR engine, designed for autonomous offline operation. Text recognition is conducted locally using Tesseract OCR, and text is converted to speech with the espeak-ng engine. A comparative analysis of the offline system versus cloud-based services evaluates parameters such as cost- efficiency, offline functionality, and user satisfaction. Results demonstrate that the offline device achieves comparable text recognition and speech synthesis performance while significantly enhancing portability, privacy, and cost-effectiveness. This research advances offline assistive technologies by presenting a portable and economically feasible alternative to internet-dependent solutions.

Keywords:

OCR for Visually Impaired, Tesseract OCR Raspberry Pi, Text-to-Speech,
Multilingual Support OCR Raspberry Pi

RADISH PLANTING MONITORING SYSTEM

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Abstract

Implementation of Internet of Things (IoT) technology-based monitoring system can enhance planting growth. This system allows real-time monitoring and have automatic intelligence which can reduce human operations and increase production of radish plant. The system relies on the user-friendly Node-RED platform which is used as a dashboard to display the data from the sensor. By using Node-RED, user can monitor the soil condition of radish plant using smartphones since the IoT devices provides real time information to user. Soil moisture also will be displayed on OLED display. A database of the findings will be stores in data storage like Google Sheets. This can help user to analyze the soil moisture pattern. The user also can get notifications alert from the application when the sensor detect anomaly reading and need to take care of. Additionally, the implementation of solar panels in this system helps user reduce power consumption and costs since solar energy is renewable energy. In summary, the used of those advanced technologies has potential to increase radish planting practices, reduce human task and enhance overall production.

Keywords

Smart Planting System, Real-time Monitoring, IoT System, Watering System
Using Sensor

IMPLEMENTATION OF FIND YOUR PAWFECT BUDDY FOR STRAY ANIMAL SHELTER MANAGEMENT

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Abstract

This paper addresses the growing stray animal crisis in Malaysia, where millions are affected by ineffective management practices due to separated reporting mechanism and challenges in rehoming of stray animals. This paper presents the implementation of a prototype system called "Find Your Pawfect Buddy" which aimed at improving the process of reporting, rescue, and adoption processes for stray animals. By using the waterfall methodology, the platform integrates essential features such as animal profiling, adoption management, and real-time reporting, serving to wide range of users including adopter, shelter staff, and the public user. The prototype is implemented using Python and MongoDB, which the system enables data analytics and real-time visualization on a user dashboard. The main objective is to simplify stray animal management, improve adoption rates, and provide valuable insights for stray allocation. The expected result is a deployed prototype that comprise the stray animal management process, from rescue to adoption, by integrating data analysis for informed decision-making. This paper also presents the prototype architecture, practical analysis by integrating real-time stray reporting and analytics to improve improving efficiencies and animal care procedures in stray animal shelter management.

Keywords:

Stray Animal, Shelter Management, MongoDB, Data Management

OPTIMIZING CHILDCARE MANAGEMENT WITH DATA AUTOMATION, ANALYTICS, AND CLOUD BACKUP THROUGH KIDBUDDY MANAGEMENT SYSTEM

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Abstract

This project aims to develop a comprehensive childcare management system to enhance the operational efficiency of managing caregivers and bookings. The proposed system integrates modules for registration, booking management, an administrative dashboard, and interfaces for parents, caregivers, and staff. Key outcomes indicate that the system improves communication, optimizes scheduling, and increases user satisfaction. Built with HTML, PHP, and MySQL, and managed via phpMyAdmin with XAMPP, the system leverages PL/SQL for complex database operations. Power BI is employed to create an interactive dashboard and database backups are securely stored in Microsoft Azure. The system's user-friendly interface and robust functionality make it a valuable tool for improving caregiver management and service.

Keywords

MySQL, PHP, Data Automation, Interactive Dashboard, Database Backups

HYBRID SECURITY OF E-AUTHENTICATION SYSTEM USING QR CODE AND PUSH NOTIFICATION FOR LIBRARY ENTRY PASS

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Abstract

Nowadays, E-Authentication System has been implemented in the various filed. The reason of the researcher introducing E-Authentication System to secure the data entry and the conventional access methods that rely on physical keys or access cards are fraught with security weaknesses, including the risks of loss, theft, or unauthorized duplication. However, applying standalone E-Authentication System is not enough to secure the data. Thus, this work created and implemented hybrid security of an E-Authentication System that utilizes QR codes and push notifications for library entry pass systems. To address these issues, the proposed system integrates QR codes for secure and efficient access management, coupled with push notifications to enhance user authentication and security. The efficacy of the new system will be evaluated through surveys and interviews. The system's design incorporates a comprehensive database structure and meticulous software components to ensure reliable and secure operations. The anticipated outcomes include enhanced access control security, increased user convenience, and a reduction in unauthorized entries.

Keywords:

E-Authentication, QR Codes, Push Notifications, Access Control, Hybrid Security

SMART STICK FOR ELDERLY AND VISUAL IMPAIRMENT PERSON WITH LOCATION DETECTOR

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Abstract

Current traditional stick have limitations in terms of obstacle detection, tracking location and health monitoring. Traditional cane unable user to receive information about their surrounding and caregiver were unable to monitor user health conditions. Therefore, this paper presents the idea of smart stick contain with few sensors to tackle the limitation. Having a sensor able to detect obstacle for user is very useful to improve user alert about their surroundings. By employing real-time tracking, the system aims to enhance user safety and ability to monitor user health is important as early detection can provide early medical attention. The usage of Telegram application and Favoriot web-based dashboard will be utilized to success the system. As the output, caregiver able to request for user location tracking in Telegram, Telegram will provide a Google Map location along with latitude and longitude of user location. While Favoriot will provide user heart rate data when it is measured, the platform able to alert user to any irregularities they may require medical attention. In conclusion, implementing advanced technologies it will enhance user safety and provide caregiver with real-time insights, which enabling caregiver respond on time in case of emergencies.

Keywords:

Location Detector, Heart Sensor, Smart Stick, Telegram, Favoriot

IMPACT OF ENVIRONMENTAL NOISE ON THE PERFORMANCE AND ROBUSTNESS OF THE IMPROVED GBLN-PSO ALGORITHM IN WSN

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Abstract

In this study, the impact of environmental noise on the performance and robustness of the Improved GbLN-PSO (IGbLN-PSO) Algorithm for indoor localization in Wireless Sensor Networks (WSNs) is examined. Environmental noise, including interference from other devices, shadowing effects, and multipath fading, can significantly impact the accuracy and reliability of localization algorithms in WSNs. The research evaluates the sensitivity of the IGbLN-PSO algorithm to various noise levels and types, focusing on its performance in terms of localization accuracy and convergence speed. Previous studies have demonstrated that the IGbLN-PSO algorithm improves both accuracy and computational time. Additionally, noise mitigation strategies are explored to enhance the algorithm's robustness in challenging indoor environments. Through comprehensive simulations and comparative analysis with traditional Particle Swarm Optimization, the strengths and limitations of the algorithm under noisy conditions are assessed, providing insights into its practical applicability for real-world WSN deployments. The findings of this study show that IGbLN-PSO algorithm is resilient and robust to the noise environment in term of localization and computational time.

Keywords:

Wireless Sensor Networks (WSN), Indoor, Environmental Noise, IGbLN-PSO, PSO, Localization, Computational Time, Accuracy, Convergence

DATA QUALITY IN IOT OPEN DATASETS: A METHODOLOGICAL REVIEW

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Abstract

The growth of the Internet of Things (IoT) has led to an increase in the volume of data generated by connected devices. However, this growth has also introduced significant challenges, particularly in data duplication, which can risk the quality and reliability of the data. The purpose of this study is to assess and thoroughly examine the quality of open-source IoT datasets, focusing on the occurrence and impact of duplicate data. By employing a Systematic Literature Review (SLR) and a literature-based comparative analysis, we reviewed and compared existing techniques for detecting these issues. Our findings reveal that while various methods have been proposed, there remains a lack of standardized approaches specifically designed for the unique characteristics of IoT environments. The study concludes by highlighting the need for more reliable and scalable solutions that are capable of handling the diverse and dynamic nature of IoT data, also offering insights into future research directions.

Keywords:

IoT Data Quality, Open-Source Datasets, Data Duplication, Systematic Literature Review (SLR) and Comparative Study

DEVELOPMENT OF E-PARCEL MANAGEMENT SYSTEM PROTOTYPE FOR MAIL UNIT AT HIGHER INSTITUTIONS

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Abstract

The implementation of an e-Parcel Management System in higher education institutions requires meeting several key criteria to enhance operational efficiency, increase student satisfaction, and address the growing demand driven by online shopping activities. This system is particularly needed in universities where students frequently receive packages. The traditional manual process of handling parcels by the university's mail management is often cumbersome, error-prone, and inefficient. Therefore, this project aims to develop a prototype system, named the e-Parcel Management System for the Mail Unit, to address these inefficiencies. The proposed system automates processes such as parcel recording, sorting, and notifications, thereby reducing errors and delays while improving overall efficiency. Key features of the system include real-time parcel tracking, instant notifications for students, and streamlined administrative tasks for staff. Additionally, the system will include a delivery service module that allows students to request or offer parcel delivery services, potentially generating income opportunities. The system is developed using XAMPP, PHP, and MySQL, with Power BI integrated for the administrative and staff dashboard. The anticipated outcome is a significant improvement in efficiency, accuracy, and user satisfaction in the university's mail management unit.

Keywords

Parcel Management System, Real-time Tracking, Power BI, MySQL

DESIGN AND IMPLEMENTATION OF A CAMPUS-WIDE FREECYCLE SYSTEM AT UTEM FOR SUSTAINABLE RESOURCE SHARING

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Abstract

This paper presents the UTeM Campus Freecycle System, a centralized web-based platform developed to optimize the exchange of unwanted items within the UTeM community. It addresses the inefficiencies and privacy concerns associated with decentralized resource-sharing methods like WhatsApp, Facebook, and Telegram, which are commonly used but lack proper organization and security. The system is designed to streamline item sharing by offering features such as user registration, item categorization, real-time item tracking, and enhanced search filters while prioritizing user privacy and data security. Using the Software Development Life Cycle (SDLC) model, the system was developed with an emphasis on scalability and adaptability. The system underwent rigorous testing, including user acceptance testing from over 41 respondents, focusing on security, functionality, and user experience. The results show significant improvements in resource-sharing efficiency, user engagement, and sustainability, providing a more secure and accessible platform tailored to the needs of the UTeM community.

Keywords:

Freecycle System, Web-based System, Sustainable Platform, User Privacy.

PREDICTIVE MAINTENANCE MODEL FOR MANUFACTURING INDUSTRY

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Abstract

This study addresses the significant issue of unexpected machine failures in the manufacturing industry through the development of predictive maintenance model. Traditional reactive maintenance practices lead to high downtime and costs, worsened by the absence of systematic predictive strategies. Leveraging historical datasets and key operational parameters like Air Temperature, Process Temperature, Rotational Speed, Torque, and Tool Wear, this study employs machine learning techniques to predict potential failures before they occur. By implementing predictive models and handling data imbalances, the initiative aims to optimize maintenance scheduling, reduce operational disruptions, and enhance overall productivity. The research compares various machine learning algorithms to identify the most effective approach for proactive maintenance in manufacturing environments.

Keywords

Predictive Maintenance, Machine Learning, Manufacturing Industry, Operational Parameters, Maintenance Scheduling

EXPLAINABLE AI IN BIOCHAR YIELD PREDICTION MODELS

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Abstract

The exponentially growing pile of food waste has highlighted the importance of sustainable methods in disposing of that unwanted material. As one of the most effective soil improvement agents, carbon sequestration and renewable energy materials, biochar has gained considerable attention from agriculture to environmental perspectives. When factors, especially temperature, retention time and feedstock composition can determine the yield of biochar, correctly predicted parameters are essential to optimize food waste management, thus minimizing the impact on the environment. In this study, we propose an interpretable AI-driven modeling framework to forecast biochar production via food waste pyrolysis. We have used various predictive models such as Linear Regression, Random Forest, K-Nearest Neighbors (KNN) and Convolutional Neural Networks (CNN). To assure the transparency of its behavior and the kind of influences that features have on predictions, we used Explainable AI (XAI) methods such as SHapley Additive exPlanations (SHAP) and Local Interpretable Model-agnostic Explanations (LIME). This work helps to improve predictive modeling in biochar production by providing insights into yield factors and promoting sustainable waste management strategies that improve environmental and agricultural outcomes.

Keywords:

Explainable AI, Biochar Yield, Predictive Modeling, SHAP, LIME

ENERGY-EFFICIENT DEVICE DISCOVERY OPTIMIZATION IN 5G D2D COMMUNICATION USING ADAPTIVE ALGORITHMS AND PROXIMITY SERVICES

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Abstract

This research focuses on enhancing the energy efficiency and discovery process in Device-to-Device (D2D) communication within 5G networks. The study addresses the high energy consumption and delays inherent in traditional discovery methods. By proposing an optimized proximity service leveraging adaptive algorithms and energy-efficient protocols, the research aims to minimize the number of discovery messages and optimize discovery cycles. The methodology involves the use of MATLAB to simulate the proposed system, focusing on parameters such as energy consumption, delay, and signal efficiency. Comparative analysis with existing works, including those using various simulators like MATLAB and LTE link-level simulators, underscores the potential of the proposed approach to extend device battery life and improve network performance. The findings contribute significantly to the advancement of D2D communication, particularly in energy-constrained environments, offering a sustainable solution for 5G network applications.

Keywords:

Device-to-Device, D2D, Discovery Device, Energy Consumption.

DEVELOPMENT OF SMART WASTE MANAGEMENT SYSTEM

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Abstract

This project presents a Smart Waste Management System utilizing sensors and IoT technology to monitor waste levels and conditions efficiently. The system incorporates a DHT11 sensor to measure humidity and temperature, an MQ-2 gas sensor to detect methane gas, and an ultrasonic sensor to gauge the fullness of trash bins. These sensors are connected to a NodeMCU microcontroller with an ESP8266 Wi-Fi module, facilitating wireless communication and data transmission. Data collected from the sensors is stored in Google Sheets, allowing for easy access and analysis. For real-time monitoring, the Blynk dashboard is employed, providing an interactive interface to view sensor data and system status. When thresholds for trash levels, gas concentration, or humidity are exceeded, the system promptly sends alerts to waste management personnel via Telegram notifications and push notifications through the Blynk dashboard. This ensures swift action to address any issues. By integrating Google Sheets for data storage, Blynk for real-time updates, and Telegram for notifications, this Smart Waste Management System effectively prevents bin overflows, monitors methane gas levels, and manages wet waste. The system offers a practical, reliable, and cost-effective solution for maintaining a cleaner and greener environment.

Keywords:

Smart Waste Management, Real-time Monitoring, Nodemcu, Environmental Sustainability, IoT

LOGISTICS MANAGEMENT SYSTEM (LMS) USING OPTICAL CHARACTER RECOGNITION (OCR) FOR CEMENT INDUSTRY

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Abstract

Logistics management systems (LMS) are integral software tools that streamline the movement and storage of goods from production to the end-user. Optical Character Recognition (OCR) technology has emerged as an essential tool in logistics management systems, mainly for automating the extraction of data from different documents. In particular, in this paper, we present the development of a web-based LMS called Cement Company Logistics Management Systems (CCLMS) for a cement company called Unipertiwi Sdn. Bhd. The company specializes in providing cement for a diverse array of projects, including commercial buildings, industrial facilities, road construction, and housing development. The development of CCLMS was motivated by real problems faced by the cement company which relies heavily on the manual LMS, especially in the payment module. As the number of logistics assignments grows, the manual system is prone to errors and delays in orders processing. In addition, there is a lack of agility in payment processing. OCR adoption in the system contributes to improving the efficiency of the LMS, especially in the payment process which can be useful for other industries with similar problems. Its effectiveness is best supported by feedback from actual users of the logistics management system (LMS). Thus, this study also evaluates the usability of a Cement Company Logistic Management System using the USE Questionnaire, which assesses usefulness, ease of use, ease of learning, and satisfaction. findings suggest the need for targeted improvements to enhance usability for logistic users, older employees, and those

with lower educational backgrounds. The analysis offers insights for optimizing the system to better meet diverse user needs, improving overall effectiveness and satisfaction.

Keywords:

Logistics management systems (LMS), Optical Character Recognition (OCR), Cement Industries, Usability, USE Questionnaire.

REVIEW OF MULTIFACTORIAL OPTIMIZATION APPROACH IN SOFTWARE TESTING

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Abstract

The rapid progress of computer intelligence has ushered in multifactorial optimization (MFO) as a powerful approach for simultaneously solving numerous optimization issues by leveraging synergies between related activities. This paper examines the current state of MFO, emphasizing its usefulness in solving difficult issues in a variety of fields, including engineering, healthcare, data clustering, and machine learning. Despite its effectiveness in these domains, there is still a substantial gap in the use of MFO in software testing, particularly test suite reduction (TSR). Furthermore, this research investigates the integration of transfer learning with MFO, focusing on its potential to improve the efficiency of optimization processes through effective information sharing. The research also compares MFO to other evolutionary algorithms, which have demonstrated varying degrees of effectiveness across numerous application domains. Our findings show that combining MFO and transfer learning can solve the difficulties of multi-task situations, indicating a possible avenue for future research into its use in TSR and other software testing challenges. This study not only expands our understanding of MFO's capabilities but also sheds light on its potential for addressing emergent and complicated computing issues.

Keywords:

Test Suite Reduction, Multifactorial Optimization, Transfer Learning, Software Testing, Comparison Review

THE IMPACT OF ENTREPRENEURSHIP INCUBATOR ON SHAPING STUDENTS CAREER CHOICES TOWARDS ENTREPRENEURSHIP

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Abstract

This study investigates the impact of entrepreneurship incubators on shaping the career choices of students toward entrepreneurship, focusing on mentorship and experiential learning. A quantitative approach was employed, surveying 60 students who completed apprentice training in the entrepreneurship incubator program at Politeknik Merlimau, Malaysia. The findings reveal a significant positive relationship between mentorship and entrepreneurial intention, indicating that personalized guidance from experienced mentors enhances students' confidence and readiness to pursue entrepreneurial careers. Additionally, a significant positive correlation was found between experiential learning and entrepreneurial intention, suggesting that hands-on learning experiences, such as business simulations and internships, effectively develop the skills and mindset necessary for entrepreneurship. These results highlight the crucial role of mentorship and experiential learning in fostering entrepreneurial intentions among students, offering valuable insights for educators, policymakers, and practitioners in enhancing entrepreneurship education programs.

Keywords:

Entrepreneurship Incubator, Mentoring, Experiential Learning, Entrepreneurial Intention.

PROFICIENCY LEVELS IN USING DIGITAL PLATFORMS AMONG POLYTECHNIC STUDENTS AND THEIR INCLINATION TOWARDS ENTREPRENEURIAL CAREERS

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Abstract

This research investigates the proficiency levels in using digital platforms among polytechnic students and their inclination towards entrepreneurship. In the digital age, effective use of digital tools is crucial for entrepreneurial success. This study aims to assess the current digital proficiency among students and determine its impact on their entrepreneurial tendencies. The study focuses on 100 respondents from the Diploma of Marketing and Diploma of Business Studies programs within the Commerce Department, Politeknik Merlimau. All of them have enrolled in a digital entrepreneurship course for one semester. A quantitative method was employed, utilizing surveys to gather data. The survey assessed students' skills in various digital platforms, including social media, e-commerce, digital marketing, and online collaboration tools, as well as their attitudes towards entrepreneurship and their experiences with digital tools in entrepreneurial activities. The study found a strong positive correlation between students' digital platform skills and their entrepreneurial tendencies, indicating that as students become more proficient in using digital tools, their interest in entrepreneurship increases. The findings suggest that integrating digital skills into educational programs is crucial for fostering entrepreneurial intentions among students, preparing them for success in the digital economy.

Keywords:

Digital Entrepreneurship, Digital Platforms, Digital Proficiency.

ARTIFICIAL INTELLIGENCE FOR ANIMAL WELFARE: A PARADIGM SHIFT IN THE HALAL MEAT INDUSTRY

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Abstract

The concern for animal welfare is a prevalent topic that is currently attracting the attention of stakeholders and consumers. The underlying cause is that the quality of the meat may be compromised by various adverse consequences stemming from improper animal handling procedures. Concurrently, as the consumption levels among Muslims escalate, there is also a growing demand for high-quality meat. As a reaction, the advancement of emerging technologies like the Internet of Things (IoT), specifically Artificial Intelligence (AI), has garnered significant interest as a means to address the welfare of animals. Therefore, this research utilises a qualitative methodology by analysing current literature to investigate the role of AI technology and assess its benefits in animal welfare. Research indicates that IOT is essential for improving digital infrastructure to achieve digitalisation, smart monitoring, and real-time tracking at every phase of an animal's journey, from arrival to lairage and ultimately to the slaughter point, thereby helping in the authentication of halal meat status. Research also indicates that this technology has significant potential to assist workers in monitoring the well-being of animals and several governments are actively investing in its development, seeing its potential to contribute to the future of halal meat industry.

Keywords:

Animal Handling, Animal Productivity, Halal, Internet of Things, Meat

CHARGESYNC: AN INTEGRATED MOBILE APPLICATION FOR SMART ELECTRIC VEHICLE (EV) CHARGING

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Abstract

Electric vehicles (EVs) are transforming transportation by offering a sustainable alternative to traditional internal combustion engines. However, range anxiety—the fear of running out of battery—remains a key challenge. ChargeSync is designed to alleviate this concern by optimising the EV charging experience. The platform includes three components: the ChargeSync App, ChargeSync Charger Interface App and ChargeSync Admin Dashboard. The ChargeSync App helps users locate charging stations in Malaysia, check real-time availability, reserve sessions, calculate charging time and make payments via Stripe. The Charger Interface App simplifies session verification through QR code scanning, while the Admin Dashboard provides insights on system performance and revenue. ChargeSync's innovation lies in its seamless integration of real-time charger availability, Stripe payments and AI-driven personalised assistance. User acceptance testing confirmed the system's effectiveness, with high satisfaction scores validating the project's success. As EV demand grows, ChargeSync is poised to support sustainable urban mobility in Malaysia and beyond, ensuring a smoother transition to electric transportation.

Keywords:

Electric Vehicles (EVs), Charging Stations, Range Anxiety, Sustainability

LEO ASTROCAST SATELLITE TRACKING SYSTEM

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Abstract

In this day and age, communication satellites play a very big role in our daily life. When a satellite is launched into orbit, this satellite needs to communicate with the ground station to carry out the task and send information to the ground station. Communication between the satellite and the ground station will not succeed if the position of the satellite in its orbit cannot be identified. Therefore, this thesis is to overcome this problem by designing and simulating the satellite tracking system focusing on the Astrocast satellite. A simulation of tracking the satellite is generated using MATLAB software to demonstrate the satellite movement using an available two line element (TLE) file provided by NORAD website. The simulation updated the orbital elements and plotted the latitude and longitude of the satellite movement. The results of the ground track obtained are more accurate with the smaller step size which is every 1 minute. The visibility period of the satellite within the coverage of ground station is determined. The result of the ground track shows that the Astrocast satellite passed the coverage of ground station for 3 to 4 times a day. The visibility period is important to scheduling the antenna mode.

Keywords:

Satellite tracking, LEO satellites, Orbital elements, TLE component.

DEVELOPING A CUSTOMISED ROV TECHNOLOGICAL APPLICATION FOR LOCAL INDUSTRY USED TO BOOST THE ECONOMY OF BRUNEI DARUSSALAM

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Abstract

Researchers use remotely operated vehicles (ROVs), which are small, maneuverable robotic devices, to study the surface of celestial bodies like planets and moons. The people, communities, and nation of Brunei Darussalam have not yet been greatly impacted by the usage of ROV technology. The reason for this is because the general public is still unaware of the benefits that ROV technology can bring to industries in need of it. The aims and objectives of this research include the order to realize the Brunei Vision 2035, it is necessary to: assess the need for the newest ROVs; analyze the current ROVs; research the features that meet the needs of the local industry; and create customized ROV technology for the local industry in Brunei Darussalam. The Brunei Fire and Rescue Department (BFRD), Radio Television Brunei, Skyvision.bn, Public Works Department (JKR), Oil and Gas, and Royal Brunei Armed Forces (RBAF) are the perspectives of the local industry that the researcher chose to be provided survey questions. There will be discussion regarding the application of ROV and the advantages of those components for each regional industry as a result of these findings.

Keywords:

Brunei local industry, Remotely Operated Vehicles, ROV, Technology.

WOMEN IN BUSINESS AND THE CHANGING DRIFTS OF ENVIRONMENTAL FUTURE: A MALAYSIAN PERSPECTIVE

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Abstract

Malaysia has witnessed a remarkable transformation in women's status and influence in various business sectors. From pioneering individuals who shattered gender barriers to contemporary leader-shaping industries, women left an indelible mark on the nation's business world. The historical evolution of women's participation in Malaysia's business landscape is a testament to resilience, progress, and pursuit of gender inclusivity. This study delves into the milestones, challenges, and achievements of women in business over the years, drawing from historical records, archival research, and government data. Nevertheless, understanding this rich historical context is not just a retrospective exercise but also informs the future. This review paper serves as a vital resource for acknowledging the legacy of women in Malaysia's corporate world and harnessing the lessons of the past to build a more inclusive, equitable, and promising future for businesses and society. Correspondingly, it emphasizes the importance of recognizing women's contributions and charting a path toward gender parity and diversity in the evolving business landscape.

Keywords:

Women, Gender inclusivity, Business transformation, Malaysia, Future direction

EFFICIENT DONATION, SUSTAINABLE IMPACT: UNVEILING THE CLOTHES RECYCLE MANAGEMENT SYSTEM

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Abstract:

This paper presents the development of the Clothes Recycle Management System (CRMS), designed to address the inefficiencies in the current methods of promoting and managing clothing donations, which rely heavily on manual processes and social media. The objective of this study is to create and implement a unified, user-friendly platform that streamlines the donation process, enhances accessibility, and improves the overall efficiency of clothing donation activities. Key features of the system include event organization, item tracking, automated reporting, and a points-based incentive scheme that encourages donations. Additionally, the system provides transparency by informing users about the destination of their donations, fostering trust and engagement. The findings demonstrate that CRMS significantly simplifies donation coordination, increases donor participation through the incentive scheme, and offers reliable data for stakeholders to assess the impact of their efforts. This study concludes that CRMS is a viable solution for enhancing sustainability and community involvement in clothing donations, with the potential for broader application in other donation-driven initiatives.

Keywords:

Clothing Donation, Clothes Recycle, Textile Waste, Database Life Cycle (DBLC), Sustainable Development Goal 12.

OPTIMIZED WEB PLATFORM FOR MANAGING CREDIT TRANSFERS IN DIRECT-ENTRY PROGRAMS

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Abstract

The process of credit transfer in higher education poses substantial challenges, particularly for students entering bachelor's programs through direct-entry pathways. This research responds to these challenges by developing a web-based Credit Transfer System (CTS) tailored to the specific needs of educational institutions and students. The project's aims to optimize the credit transfer process, minimize redundant coursework, and ensure secure and efficient handling of student data. Traditional manual systems, often plagued by inefficiencies such as data loss and processing delays, are replaced by this automated, secure online platform. The CTS simplifies credit submission and evaluation, offers clearer guidance on academic pathways, and reduces the administrative workload associated with credit transfer. Utilizing Agile methodology, the development process was highly adaptive to user feedback, ensuring the final system meets the evolving needs of students and administrators alike. By enhancing the accuracy and speed of credit evaluations, the CTS improves the educational experience for direct-entry students, enabling smoother academic transitions and expediting degree completion. This research demonstrates that the implementation of a web-based CTS represents a critical advancement towards a more efficient, secure, and student-centered approach to credit transfer, ultimately benefiting both students and educational institutions.

Keywords:

Credit Transfer System, Higher Education Efficiency, Web-Based Management System, Automated Academic Process, System Implementation and Development, Database Life Cycle (DBLC)

DESIGN AND DEVELOPMENT FOR SCHOOL CO-CURRICULUM MANAGEMENT SYSTEM

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Abstract

School Co-Curriculum Management System (SCMS) is an advanced platform designed to improve the management of co-curriculum activities in most school in Malaysia. The SCMS aims to provide a unified solution for scheduling activities, tracking student participation, and generating comprehensive performance reports. The design phase involved a thorough requirement analysis to capture user needs and institutional objectives, ensuring the system's alignment with educational goals. A detailed database architecture was implemented, leveraging SQL-based technologies to support complex data management tasks, including the creation of tables, views, and relationships. During the development phase, the focus was on coding, establishing database objects, and integrating automated processes such as stored procedures and functions to optimize system operations. The testing strategy encompassed various methodologies, including functionality, security, and performance testing, to validate the system's reliability and efficiency. The SCMS is designed to improve administrative efficiency, enhance student engagement, and provide actionable insights into co-curriculum activities, thereby serving as a critical tool for institutions seeking to streamline and elevate their co-curriculum management processes.

Keywords:

Co-Curriculum System, School Management, Co-Curriculum Activity, Student Contribution

SMART DETECTION: IMAGE PROCESSING FOR PLANT LEAF CLASSIFICATION

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Abstract

The increasing demand for reliable and efficient agricultural technology has driven the development of advanced solutions for disease management and plant health monitoring, particularly in hydroponic systems. Traditional methods of plant disease identification are often prone to human error, leading to delays and significant crop losses. This research proposes leveraging modern image processing techniques to enhance the accuracy and scalability of plant leaf disease diagnosis through a multi-class support vector machine (SVM) model. The methodology employed in this study involves systematic steps, including data collection, preprocessing, model development, and performance evaluation. The proposed SVM model demonstrates high accuracy in identifying plant leaf diseases, offering a computationally efficient solution that aligns with environmentally sustainable agriculture practices. This approach addresses a critical gap in smart agriculture by establishing a foundation for more precise and scalable disease detection systems. As a result, it contributes to increased crop yields and reduced disease-related losses in controlled agricultural environments such as hydroponics.

Keywords:

Plant Leaf Classification, Image Processing, Deep Learning, and Multi-SVM