



IC²ESSU

**4th International Conference on Engineering,
Social-Sciences and Humanities**

IC²ESSU 2024

19th-20th April 2024 | Manila, Philippines

Hybrid Conference

Organized by:

University of Mindanao TAGUM College, Philippines
Mangalmay Institute of Engineering and Technology, India
Philippine College of Criminology Manila, Philippines
Manila Secondary Science Research Advisers' Association, Philippines &
Institute For Educational Research and Publication (IFERP)-
Philippines Society

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Theme:
**“Science, Education
and Humanities:
A Trilateral Balance”**



Preface

We are delighted to extend a warm welcome to all participants attending 4th International Conference on Engineering, Social-Sciences and Humanities (ICESSU-2024) organized by University of Mindanao TAGUM College (Philippines), Mangalmai Institute of Engineering and Technology (India), Philippines College of Criminology Manila (Philippines), Manila Secondary Science Research Advisers' Association (Philippines) & Institute For Educational Research and Publication (IFERP)-Philippines Society on April 19th-20th, 2024. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the field of Educational Research. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for ICESSU-2024 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Engineering, Social-Sciences and Humanities. All submitted papers were subject to rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings have been selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results in Engineering, Social-Sciences and Humanities but also serve as a valuable summary and reference for further research in this field.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the many professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also extend our appreciation to the external reviewers for providing additional support in the review process and to the authors for contributing their research results to the ICESSU-2024.

Since December 2023, the Organizing Committees have received more than 250+ manuscript papers, covering all aspects of ICESSU-2024. After review, approximately 100+ papers were selected for inclusion in the proceedings of ICESSU-2024. We would like to thank all participants at the conference for their significant contribution to its success.

We express our gratitude to the keynote and individual speakers and all participating authors for their dedication and hard work. We also sincerely appreciate the efforts of the technical program committee and all reviewers, whose contributions made this conference possible. Finally, we extend our thanks to all the referees for their constructive comments on all papers, and we express our deepest gratitude to the organizing committee for their tireless work in making this conference a reality.

About

ICiESSU-2024

ICiESSU-2024 is the 4th International Conference on Engineering, Social Sciences And Humanities, which is scheduled to take place on the 19th & 20th of April 2024 in the Philippines. This is organized by the Institute for Educational Research and Publication (IFERP)-Philippines Society.

The goal of this international conference on multidisciplinary research and education is to provide a stage for researchers, scholars, and practitioners to share knowledge on the latest technological advancements. If you want to spread awareness of your incredible research findings and other work, this conference allows you to present your papers and articles in reputed journals.

Benefits of Conference

Currently, multidisciplinary research has become the most viable and efficient way to solve the problem. In this era of rapidly changing society, many kinds of socio-economic problems, related to other disciplines such as politics, anthropology, psychology, have arisen which require a holistic approach to find their solution.

When we speak of a multidisciplinary, transdisciplinary or interdisciplinary research team, we imply collaboration between people from different disciplines. Thus, the concept of a multidisciplinary research team can be considered as a subset of the concept of collaborative research.

Objective of the Conference

ICiESSU-2024 aims to bring engineering, Social Science and Humanities research areas on a global platform. By providing a stage for collaboration, ICiESSU aims to enhance the application of research in practical contexts. You can refine your skills, exchange ideas, and build networks by engaging with experts, high-level delegates, and peers. The 4th International Conference on Engineering, Social Sciences, and Humanities isn't merely a conference; it's a collaborative initiative that actively shapes the research trajectory and its applications.

Join us in Manila, Philippines, from April 19th to 20th, 2024, to embrace the journey and empower the future of interdisciplinary knowledge. Register now and become a catalyst for progress at IC-ESSU 2024, where each moment is an opportunity to contribute to a transformative and innovative future.

About IFERP

Institute For Educational Research and Publication (IFERP) is a non-profitable professional association meant for research and development in the fields of Engineering, Science & Technology. With a global presence, IFERP is committed to advancing knowledge across diverse disciplines through international conferences, workshops, and scholarly publications. We provide help, assistance, and direction in preparation for SCI and SCIE journal publishing. These journals undergo a rigorous peer-review process to ensure the quality publication of the most fascinating findings on Arts & Science, Management, Engineering, and Technology.

IFERP has established robust scientific, academic, and industry networks throughout Asia, the Middle East, and Europe. Some of the countries that IFERP has its presence, include Iraq, Maldives, Thailand, Malaysia, Singapore, Philippines, Indonesia, Taiwan, Vietnam, UAE, Australia, Japan, Sri Lanka, Nepal, Ghana, and Africa. As a hub for educational and research initiatives, IFERP plays a pivotal role in shaping the landscape of global academia, fostering innovation, and contributing to the advancement of knowledge across borders.

Mission

“Upskilling the knowledge hub through technological innovation and excellence for the benefit of humanity”

Vision

“A Digitally equipped robust, dynamic & swift professional community integrating academics & industry for upgraded technical knowledge implementation.”

Message from MD, IFERP

On behalf of IFERP & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the 4th International Conference on Engineering, Social-Sciences and Humanities (ICiESSU-2024) is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in the field of Educational Research.

This conference creates solutions in different ways and to share innovative ideas in the field of Engineering, Social-Sciences and Humanities. ICiESSU-2024 provides a world class stage to the Researchers, Professionals, Scientists, Academicians and Students to engage in very challenging conversations, assess the current body of research and determine knowledge and capability gaps.

4th International Conference on Engineering, Social-Sciences and Humanities (ICiESSU-2024) will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Science and Engineering from all over the world. ICiESSU-2024 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the field of Engineering, Social-Sciences and Humanities.



Mr. A. Siddth Kumar Chhajer

MD & Founder, IFERP
Technoarete Group

Message from CEO, IFERP

IFERP is hosting the 4th International Conference on Engineering, Social-Sciences and Humanities (ICESSU-2024) this year in month of April, 2024. The main objective of ICESSU-2024 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts.

Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader. I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of Organizing Committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.



Mr. Rudra Bhanu Satpathy

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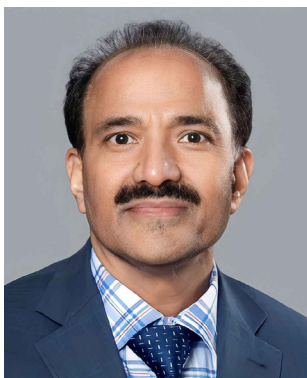
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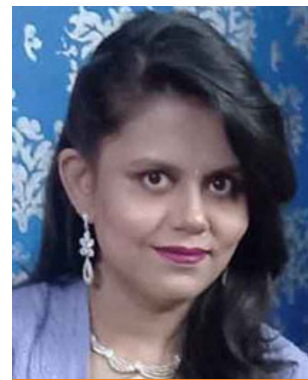
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The Lived Experiences of Teachers on the Utilization of Animated Videos in Teaching Elementary Pupils

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Abstract:

Using animated videos in teaching has gained popularity as an innovative approach to enhance learning in elementary education. This qualitative study used a phenomenological approach to explore the lived experiences of teachers who utilized animated videos as a teaching strategy in teaching elementary pupils. To find recurring themes and patterns, the data was examined through thematic analysis. The study was conducted in Magugpo Pilot Central Elementary School, Tagum City, Davao del Norte, with 14 elementary teachers as participants. For teachers' experiences, five significant themes emerged, such as using cartoons and 3D animations, choosing developmentally appropriate animated videos, considering technical elements of animated videos, contextualizing and localizing animated video content, and using animated videos as an energizer. Moreover, teachers shared their coping strategies, such as enhancing skills through self-learning and training programs, sharing resources with other teachers, having patience, embracing technology despite difficulties, and investing in high-quality resources. Finally, their insights on the importance of utilizing animated videos showed four significant themes: effective teaching delivery, entertainment purposes, encouraging teachers to utilize animated videos, and training and seminar workshops for teachers. This study contributed to understanding the use of animated videos in teaching and provided insights into integrating this tool in elementary education to enhance student learning outcomes. It is recommended in this study that schools must have adequate strong internet connections within the school's premises for faster downloading and sharing of resources by teachers online.

Index Terms:

BEED-Generalist, Animated Videos, Teacher's Experiences, Phenomenology, Philippines

The Influence of the Use of Information Communication Technology on the Memory Function of 2nd Year College Students

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Abstract:

The objective of this study was to find out what domain in the use of information communication technology (ICT) significantly influences the memory function of 2nd year college students. The researcher used a quantitative, non-experimental research design utilizing causal effect technique in research and utilize downloaded, adapted, and modified questionnaire to gather the data. The respondents of this study were the 344 2nd year college students enrolled on any course of a college institution. Mean, Pearson-r, and Regression Analysis were the statistical tools used to interpret the data collected. The result of the survey revealed that the level of use of information communication technology with regards to e-mailing, media sharing, text messaging, video gaming, social media, phone calling and television viewing is high. Also, the level of memory function in terms of retrospective function, remembering past events and mnemonics usage is high. It was found out that there was a significant relationship between the use of information communication technology and memory function. Furthermore, e-mailing and phone calling both were the domains in the use of information communication technology that significantly influence the memory function of the 2nd year college students.

Index Terms:

Information Communication Technology (ICT), Memory Function, College Students, Philippines

Food as a Therapeutic Means to Cope with Homesickness among Migrant Workers

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Abstract:

Introduction: This study examined whether food acts as a therapeutic means among migrant workers that suffer from homesickness. It investigates the experiences with regard to their thoughts and emotions that accompany homesickness and how food is used as therapy towards it.

Purpose: With an estimated 169 million migrant workers that make up 62 percent of the international migrant stock in 2019. There is a need to explore experiences. This paper aims at offering insights and traces some salient aspects of how food acts as a therapeutic means to cope up with homesickness, To understand their experiences with regard to homesickness and to find out what the emotions and thoughts attached to food.

Method: The research design for this study was qualitative research in which the data was analyzed through a thematic analysis using a conventional approach. A group of individuals was found that match the criteria that show a high range in the UHS scale Utrecht Homesickness Scale (UHS). Following the screening and selection of the participants, individuals who matched the criteria were approached for the study. The ones who were willing to participate was given a consent form with information about the study. The questionnaire of the interview was validated by 3 experts following which the participants were interviewed about the various aspects of their experiences. Participants were interviewed individually.

Results: The data was analyzed using thematic analysis based on conventional thematic analysis (Hsieh & Shannon, 2005) transcribed data was examined to identify similar patterns in the experiences of the individuals that have been selected for the study and then draw results out from it. Qualitative analysis of open-ended responses identified 4 themes among the 10 interviews which were Challenges due to migration, Emotions, Sensory cues, Rituals and traditions.

Conclusions: The study contributes to a broader understanding of the emotional and psychological challenges that homesickness presents but also promotes cultural preservation, social integration, and a sense of belonging. As the world continues to witness increasing migration and globalization, recognizing and harnessing the therapeutic potential of food is vital for supporting the well-being of migrant workers and helping them find comfort in their new surroundings.

Index Terms:

Homesickness, Migration, Food



Potential of Cash Waqf as Islamic Philanthropy for Education Development in Indonesia

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Abstract:

This research aims to determine the potential of cash waqf as an Islamic philanthropy in developing education in Indonesia. The research results show that the role of cash waqf is very important in empowering education. Cash waqf plays a role in several waqf institutions in supporting and improving education materially. Researchers chose cash waqf because of the need to utilize cash waqf which has implications for the development of education as well as the lack of socialization in society regarding cash waqf in Indonesia. On the other hand, researchers want to get an overview of the management and management of cash waqf in Indonesia. The method used in this research is a qualitative method with a descriptive analysis approach to explain the implementation of cash waqf in empowering education. The scope of research activities and integration is limited to Waqf Institutions that maximize cash waqf in empowering education in Indonesia, as well as how to manage cash waqf in synergy in the education sector by waqf institutions. Apart from that, it is also to obtain more in-depth research on cash waqf and also optimize other fields to empower the people.

Index Terms:

Cash Endowments, Philanthropy, Education

Application of Artificial Intelligence in the Evaluation of Positional Accuracy and Statistical Validation of Digital Elevation Models for Hydrological Studies

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Abstract:

Accurate terrain modeling is essential for the implementation of hydrological studies, especially in the delimitation of hydrographic basins. This study uses Artificial Intelligence to comprehensively evaluate Digital Elevation Models (DEMs) specifically SRTM, AlosPalsar and ASTER in the Moquegua region, Peru. We use three recognized standards to evaluate the positional accuracy of DEMs: EMAS, NMAS, and NSSDA. The DEMs were also evaluated through correlation, the coefficient of determination (R^2) and the Bland-Altman Graph, which allowed us to understand and visualize the relationship and agreement between the elevations extracted from the DEMs and the altimetric control network of the national chart. of Peru at a scale of 1:25000. The correlation and R^2 revealed an extremely strong relationship and a high degree of explanation for the variability of the elevations observed by the MDEs. The Bland-Altman plots confirmed the agreement between the elevations predicted by the MDEs and those observed at the points of the altimetric control network. This study highlights the importance and value of combining artificial intelligence techniques with statistical validation methods and positional accuracy standards to ensure the accuracy and reliability of EDMs in hydrological applications, thus providing a robust and verifiable framework for future research in this domain.

Index Terms:

Artificial Intelligence, Positional Accuracy, Digital Elevation Models, Hydrological Studies



A Needs Analysis of Interactive Multimedia based Practice Model of Sepak Takraw Basic Technique

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Abstract:

The purpose of this study was to know the needs analysis of interactive-multimedia based practice Model of sepak takraw basic technique. This study was conducted at extracurricular activities at the Palembang City Junior High School. This study used a descriptive qualitative method. The process of collecting data used observation, interview, questionnaires, and documentation. The results of practice analysis can be described as follows: (a) The lack of student interest in participating in sepak takraw extracurricular activities is because students feel sepak takraw is a difficult sport (b) the lack of student interest in practice sepak takraw basic technique moves due to the lack of initial knowledge about the sepak takraw basic technique and at the beginning of practice the trainer only gives warming instructions. (b) In the core practice of the sepak takraw basic technique, the students perform the movements exemplified by the trainer. (c) Evaluation / feedback has not been found when the practice process takes place related to the mistakes made by student movements. (d) At the end of the practice activities, students are only cool down without a thorough evaluation of the practice that has been done such as a description of the errors of movement. They are often done by students. (e) The absence of further explanation of the material that will be delivered by the trainer so that makes students confused when making movements at the next meeting. It can know from the percentage of students interesting, enthusiasm, and their agree of interactive multimedia learning. Besides that, the facilities of practice are most dominant using technology.

Index Terms:

Interactive Multimedia, Learning Practice, Needs Analysis, Basic Technique, Sepak Takraw

Effectiveness of Learning Model Through Circuit Game Approach toward the Increase of Physical Fitness in Upper Grade Students of Primary School Number 1 West Lombok

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Abstract:

This study aims to determine the effectiveness of the learning model through a circuit game approach to improve physical education. This research is a type of experimental research with a quantitative approach and the *Matching only design*. In this study there were pretest–posttest to ensure the effectiveness of the treatment given. The population was upper grade elementary school students at West Lombok Elementary School Number 1. The sample technique used in this study was stratified random sampling. The data analysis technique used in this study was descriptive statistics. t–test at a significant level of 95% or 0.05. The results of this study indicated that the results of data analysis of the level of physical fitness through the game approach after the implementation of the learning model through the circuit game approach in upper grade students at elementary schools are obtained t–count of 54.052. Meanwhile, the significant value obtained is $0.000 < \alpha < 0.005$. Because the significant level is smaller than a 0.005, there is an effectiveness of the learning model through a circuit game approach to increase the physical fitness of upper grade elementary school students.

Index Terms:

Effectiveness, Learning Model, Circuit Game, Physical Fitness

Endurance of High School Students Aged 15–18 Years: A Literature Study

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Abstract:

The achievement of peak performance cannot be separated from the coaching that is carried out in stages and continuously through the search and monitoring of talent, coaching, education, and sports training based on knowledge and technology effectively. School age is the largest source of population and potential in sports coaching, so that the sports development system cannot be separated from the school scope. This study is a literature study that aims to analyze the needs of endurance (VO₂ max) in high school students aged 15–18 years, both athletes and non-athletes. The available results show that high school age is an age that is in stages 4 and 5 in the coaching pattern based on the LTAD model. This stage coaching is to build, prepare, and optimize physical conditions according to the needs of the sport they are engaged in. Endurance is one of the biomotor components of physical condition formation for physical fitness and sports achievement, especially in endurance sports. At the age of 15–18 years the VO₂ max value (ml/kg/min) for non-athlete students is around 45–56 (M) and 36–46 (F). Meanwhile, student athletes have a different range of values, depending on the type of sport they are engaged in. However, if it is based on the level of activity in sports activities, the need for VO₂ is estimated as follows: 1. Young active adults (40–55), Competitive young adults (60–70), elite endurance athletes (70–85).

Index Terms:

Endurance, High School

Higher Education Awareness: How are the Parent's Perceptions?

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Abstract:

Education is a very important thing in life. Support from the Indonesian government by declaring 9 years of compulsory education at the tertiary level indicates that education is highly recommended for the formation of a young generation with knowledge and character. Apart from the government, parents are central to creating a quality young generation. It doesn't just stop at upper secondary education, higher education is also something that parents should pay attention to. Therefore, parents' awareness in supporting their children, especially girls, in continuing their education to college is something that should be implemented. However, obstacles and support cannot be separated from this realization due to life in remote or rural areas. This research will discuss parents' perceptions in supporting their daughters to go to college. This research uses a qualitative approach, a phenomenological type. Participants in this research were 7 parents in Ujong Padang Village–Nagan Raya, Aceh Indonesia. Data collection was carried out by observation and interviews. Data analysis was carried out using Atlas. ti 22 software. The research results showed that there were positive and negative perceptions from parents regarding support for sending their daughters to college. Barriers faced by parents in general are lack of funds, children's health, and transportation problems.

Index Terms:

Higher Education, Indonesian Government, Young Generation

FlexiFold: Sensor-Based Automatic Shirt Folding Machine with Dynamic Size Adjustment

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Abstract:

Folding t-shirts manually is a known time-consuming chore. In recent times, automation has played a crucial role in boosting productivity, cutting down manual efforts, and enhancing overall efficiency. Automated folding machines have surfaced as a result. This paper aims to create a Sensor-Based Automatic Shirt Folding Machine with Dynamic Size Adjustment. The study utilizes sensors, motors, and a microcontroller to efficiently fold t-shirts of different sizes, categorized as kid's, adult's, and plus size. The developed machine incorporates a feedback and control mechanism to ensure successful folding. The machine's process includes the evaluation of sensors, an adjustment mechanism, folding, and stacking. Performance evaluation of the machine was conducted, focusing on folded shirt accuracy in terms of output dimensions and the time taken for folding. The results indicate a 5% error rate in achieving the desired dimensions and an average folding speed of 8.67 seconds per shirt. This project holds promise for further improvement and potential use in the clothing industry.

Index Terms:

FlexiFold, Automatic Shirt Folding Machine

Smart Safety Helmet with Environmental Monitoring, GPS and Anomaly Detection

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Abstract:

The purpose of this research project is to structure and implement an advanced safety system for industrial, mining, and sanitation workers. The project involves the integration of sensors, including temperature/humidity and MQ6 gas sensors, into a smart helmet. The helmet is equipped with LEDs to indicate hazardous environmental conditions, and it incorporates a NEO 6M module for precise location tracking. Sensor data is sent to the Firebase cloud, linked to the "Safety Helmet Monitoring" mobile application, where users can monitor real-time environmental conditions. The app also provides alerts if predefined thresholds are exceeded. The project leverages machine learning, specifically the One-Class SVM model, for anomaly detection in collected sensor data.

Index Terms:

Smart Helmet, IoT, Anomaly Detection, Industrial Safety, Machine Learning

Preserving The Local Wisdom Values of *Sedulur Sikep* (The Samin Tribe) for Character Education Campaign in Indonesia

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Abstract:

This research aims to describe and analyze one of the local wisdom in Indonesia, namely the local wisdom of the *Sedulur Sikep Samin* Tribe, which is one of the pearls of wisdom originating from one of the regions in Central Java, Indonesia. This wisdom comes from the accumulation of knowledge and policies that grow and develop which rely on philosophical values, ethical values, and traditional institutionalized behavior for managing natural and human resources which are a worldview formulation. This research is a type of qualitative research with data collection techniques using library research which includes: searching for keywords, subject matter, books, and the latest scientific articles. The data analysis technique in this research uses technical data analysis in the form of content analysis through four stages, including data reduction, data presentation, data verification, and conclusion. The results of this research show that the local wisdom of the *Sedulur Sikep* of the *Samin* tribe should be widely known and continue to be preserved because the Samin people are a society that has an innocent and honest personality, open to everyone, considers everyone as brothers so that an attitude of togetherness is always prioritized. What is said is always under the reality he experiences. Everything that is done is never engineered. The *Samin* tribe strongly upholds an attitude of not being envious, not envious, not having bad prejudice towards other people and there is no crime found in the community.

Index Terms:

Local Wisdom, Samin Tribe, *Sedulur Sikep*, Community, Character Education

Air Purifier with Thermoelectric Cooling and Advanced Air Monitoring Sensors

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Abstract:

Global air pollution presents a pressing concern impacting human well-being. The growing emphasis on indoor air quality (IAQ) and heightened demands for enhanced home comfort have fueled interest in innovative solutions. This research introduces a comprehensive system integrating real-time monitoring, air purification, and cooling technologies using sensors, filters, Ultraviolet light, and a Peltier Module. Effectively eliminating indoor pollutants like dust and micro-particles, the device is equipped to detect smoke, methane, LPG, and carbon monoxide, while monitoring temperature and humidity. Post-purification, the air undergoes partial chilling for improved interior temperatures. Operated through a manual remote control and the 'BLYNK IOT' Android application, The system enables remote operation over long distances, extending its functionality to operate seamlessly through the internet. Assessments indicate a temperature decrease of 5–7 °C in real-time monitoring accuracy. Furthermore, the project incorporates automated control functions for the cooling system, humidifier activation, and alarm notifications, responding from the output of the sensors. This holistic approach showcases the potential for future advancements in IAQ solutions and Heating, Ventilation, and Air Conditioning (HVAC) technologies.

Index Terms:

Air Purifier, BLYNK I. O. T., Peltier Module, Thermoelectric Coolers

Cognitive Empathy and Complex Traumatic Events in “The Almond Tree”: A Study of Cultural Trauma and Collective Identity

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Abstract:

Michelle Cohen Corasanti's work of fiction, *The Almond Tree*, is a heartbreaking work of cognitive empathy. This book shed light on the sociocultural trauma that has caused Palestinian cultures to be perceived as a danger to their fundamental collective identities. The depressing and terrifying circumstances faced by Palestinians create a lasting impression on readers' minds. The narrative bridges cultural gaps and fosters empathy by humanizing the characters on both sides of the conflict. The horrific situations facing Palestinians are depicted in the eerie account of events. The narrative of Ahmed Hamid (Ichmid), a Palestinian youngster who chose to venture all the way and against the tides, is the basis for *The Almond Tree*. Through Ahmed Hamid's relationships with Jewish characters, the novel emphasizes the shared humanity that transcends political and religious differences. This work of fiction has been analysed using the ideas of Cultural trauma and Collective identity. The concepts of Suzanne Keen, Jeffrey C. Alexander, Neil J. Smelser, Ron Eyerman and Piotr Sztompka have been used to analyse this text under debate utilising the theories of Cultural trauma and Collective identity. I have attempted to investigate the tragic work of this fiction and narrative and cognitive empathy through the application of critical analysis technique.

Index Terms:

Cognitive Empathy, Complex Traumatic Events, The Almond Tree, Cultural Trauma, Ahmed Hamid (Ichmid)

Urban Sheds: Enhancing Walkability through Green Sheltered Walkways in Del Pilar Street, Cabanatuan City

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Abstract:

Urban sheds are envisioned as green corridors that include vegetation and landscaping components to produce a more aesthetically pleasing and environmentally friendly urban environment. The addition of greenery further improves the city's visual appeal, but it also helps mitigate the urban heat island effect and improve air quality. This research focuses on the urban enhancement of Cabanatuan City's walkable streets, suggesting the installation of green covered walkways on city streets. The goal of this study is to develop a network that connects main roads, parks, and suburbs, making walking a leisure activity. Through an in-depth review of case studies, design principles, and the repercussions on community well-being, the study aims to provide substantial information to urban planners, builders, and policymakers.

The creation of urban sheds, as a multifaceted approach to urban development, not only addresses the practical need for heat relief but also promotes the shift toward sustainable and active modes of transportation. This research contributes to the discourse on urban design by presenting a tangible solution for City of Cabanatuan unique climate challenges, emphasizing the potential ripple effects on public health, environmental sustainability, and overall urban vibrancy.

Index Terms:

Urban Sheds, Green Sheltered Walkways

Durable Textile-based Sensor for Repetitive Glucose Measurement

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Abstract:

Diabetes is one of a disease with high growth in this world preventive and corrective action are needed through simultaneous measurement of blood sugar levels. A new method has been developed that allows the blood sugar checking levels to be carried out continuously to achieve a comprehensive assessment non-invasive. This research studied the process of designing and fabricating a Multi-layer textile-based sensor through the direct coating method. Sensor performance was evaluated using a glucose solution with concentrations ranging from 10 to 50 mM at a voltage of 0.55 V for 300 seconds with a time interval of 0.5 seconds. Subsequently, durability testing of the sensor against repeated folding was conducted by subjecting it to repeated 90° folds with intensity variations of 0 to 50 times before chronoamperometry measurements were executed. It is observed that the design and fabrication of the Multi-layer textile-based sensors can be achieved using the coating method with carbon paste and Ag/AgCl paste on double-faced fabric. The Multi-layer textile-based sensor in this research demonstrates superior durability compared to screen-printed carbon electrode sensor.

Index Terms:

Durable Textile, Repetitive Glucose Measurement

Social Responsibility Practices of Small and Medium Enterprises (SMEs) in the Province of Bukidnon

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Abstract:

The purpose of this study was to determine the social responsibility practices and the significant difference in the 393 small and medium enterprises (SMEs) in the Province of Bukidnon. The enterprises were grouped by classifications, business organizations, and business types. The study used descriptive survey method, questionnaire, percentage, mean, t-test, and ANOVA. Results showed that most of the enterprises are small in the category with ten years and below business experience. Most are sole proprietorship and involved in the business of retailing. Results revealed that there is a high level of social responsibility practices in terms of economic, legal, ethical, discretionary/philanthropic, and environmental aspects. The results showed that there is no significant difference in the level of compliance to social responsibility practices for small and medium enterprises by classification and by business type. However, the study yielded a significant difference in social responsibility practices when analyzed by business organizations. Furthermore, this study recommends that small and medium enterprises should integrate social responsibility in all phases of their business operation that will improve the quality of life of the workforce and their families, the welfare of the community, and the well-being of society.

Index Terms:

Small and Medium Enterprises, Social Responsibility

Enhancing Cardiac Detection through IOT and ML Innovations

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Abstract:

This paper introduces a cardiac detection prototype leveraging IoT and ML to identify patients at risk of cardiac disease in Bangladesh, aiming to address the financial burden of regular checkups. The comprehensive approach involves sensor modules for heart BPM, Cholesterol, ECG, Blood Pressure, and ongoing efforts to integrate the Glucose module. Empowering individuals with real-time feedback and predictive insights contributes significantly to preventive healthcare, potentially improving overall health in Bangladesh and beyond. However, ensuring the accuracy, reliability, data privacy, and security of the machine learning model is crucial for successful adoption. The study's primary objective is to predict cardiovascular diseases, comparing various machine learning algorithms for heart disease detection, with the paper organized into sections on motivation, previous research, proposed methodology, and experimental results.

Index Terms:

IoT, Machine learning, Cardiovascular disease, Heart rate, ECG, Pulse oximetry, Web development

Topology Optimizing Hand Brake Design: A Comprehensive Approach Through Experimental Topology Optimization

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Abstract:

This study explores the application of experimental topology optimization to enhance the design of a complex mechanical component, the bell crank lever. The primary objective is to minimize its mass while ensuring structural integrity and performance. Utilizing photoelasticity experiments enables the visualization and analysis of stress patterns in birefringent materials, providing experimental verification of the optimized design's stress distribution. The research begins with formulating the topology optimization problem, defining the design space, objective function, and constraints. Computational analysis is conducted using the Altair Optistruct topology optimization tool, and Finite Element Analysis (FEA) simulates the structural response of both initial and iteratively optimized models. The latter is validated through the photoelasticity method.

Optimization employs the density method, iteratively updating material distribution to enhance the objective function while adhering to defined constraints. The hand brake of racing car, results indicate a 24.45% reduction in weight while preserving structural integrity. Photoelasticity proves crucial for experimentally verifying stress distribution. The combination of computational simulations and experimental validation through photoelasticity provides a comprehensive approach to optimizing and validating mechanical components. This research showcases the potential for efficient design improvements in real-world applications, emphasizing the importance of integrating computational tools and experimental techniques for a robust design optimization process.

Index Terms:

Topology, Hand Brake Design, Finite Element Analysis (FEA)



A Visionary Approach to Lip Reading Using Recurrent Neural Network

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Abstract:

Lip reading is a fascinating field that involves interpreting lip movements to comprehend spoken language. It has gained considerable prominence due to its potential for revolutionizing human-computer interaction and providing support to individuals with hearing impairments. In this paper, we present an innovative vision-based lip reading system that harnesses the power of Recurrent Neural Networks (RNNs) to decode spoken words from video sequences capturing lip movements. Our proposed system is designed to process video inputs in the absence of audio, utilizing advanced pre-processing techniques to extract crucial frames that effectively encapsulate the speaker's lip motion. Subsequently, these selected key frames undergo meticulous processing to isolate the Region of Interest (ROI) corresponding to the lip area, enhancing the system's efficiency in focusing on relevant visual cues. RNNs, renowned for their capability to capture temporal dependencies in sequential data, serve as the core analytical tool within our system. Leveraging Long Short-Term Memory (LSTM) networks, the RNNs are adept at unraveling the intricate sequential information embedded in lip movements. This empowers our system to discern and interpret the nuances of spoken language by deciphering the temporal patterns inherent in the visual representation of lip motion. The integration of deep learning methodologies, specifically RNNs, enables our lip reading system to surpass traditional approaches by providing a more nuanced and contextually rich analysis of lip movements. The utilization of visual representation as the primary input source, devoid of audio, extends the applicability of our system to scenarios where audio data may be insufficient or unavailable.

Index Terms:

Lip Reading, Recurrent Neural Networks, LSTM, Visual Representation, Speech Recognition, Deep Learning

Secure Innovative Voting System with Biometric and OTP Authentication

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Abstract:

The Smart Fingerprint-Based Voting System with GSM-Based Authentication Alert and OTP authentication is a cutting-edge solution designed to enhance the security and efficiency of the voting process. Traditional voting systems often face challenges related to identity verification and timely authentication, leading to potential electoral fraud. This innovative system leverages biometric technology, specifically fingerprint recognition, and GSM (Global System for Mobile Communications) communication to ensure secure and reliable voting procedures.

The core components of this system include a fingerprint recognition module, a GSM communication interface and OTP authentication. Eligible voters are enrolled in the system by registering their unique fingerprints and mobile number, which serve as their identity for the voting process. During the election, voters are required to place their fingerprints on the designated sensor, which is then compared to the registered biometric data for authentication, if matched an OTP is generated to registered mobile number and voters must authenticate themselves by entering the OTP through keypad connected to the system. If the fingerprint is not matched, an alert is immediately sent via GSM to election authorities, ensuring rapid response to potential voting irregularities.

Index Terms:

GSM, Arduino Mega, Fingerprint recognition, OTP authentication

The Influence of Eco-Labels on Green Purchase Intention in Gallon Mineral Water in Indonesia: Adopting the Theory of Reasoned Action and Moderated by Product Knowledge

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Abstract:

This research adopts the Theory of Reasoned Action (TRA) to examine the influence of eco-labels on the purchase intention of consumers for green gallon mineral water. The objective of this study is to explore the impact of eco-labels on consumer purchase intention for green gallon mineral water at Le Mineral within the context of the young market, specifically Generation Z, aged 12 to 29 years. The research method employed is quantitative, involving the distribution of questionnaires to Generation Z respondents in Indonesia with a total of 210 participants. Data analysis in this study utilizes Structural Equation Modeling – Partial Least Squares (SEM-PLS) using PLS Version 4 software. The results reveal that eco-label has a significant positive impact on attitudes toward the product and subjective norms, and there is a negative impact on purchase intentions for green products. Product knowledge moderates the influence of attitudes toward the product and subjective norms on consumer purchase intentions. The relationship between attitudes toward the product, subjective norms, and purchase intentions is stronger in consumers who know green products compared to those with less understanding of such products.

Index Terms:

Eco-Label, Attitude Toward Product, Subjective Norm, Purchase Intention, Theory Of Reasoned Action

Modernizing Training: AI Facilitated Personalized Virtual Tutor

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Abstract:

The project's goal is to create an AI-based virtual trainer using computer vision technologies. The device uses a camera to track the user's motions during exercise and deliver real-time feedback to enhance form and technique. The AI model will analyze gathered data to find deviations from the intended form and recommend corrective measures. The device will also generate tailored workout plans and monitor the user's progress. The proposed AI virtual trainer can improve workout routines and promote healthy behaviors for individuals. The stance could be a squat or sit-up. Users can choose whether to do squats or sit-ups. The input will be obtained via a binary format. Each function is clearly labeled as a squat or a push-up. Input is received via a real-time webcam or video. The technology used is OpenCV. The existing method is not based on real-time web cameras and has extremely low accuracy. The suggested system is scalable and efficient in all aspects, including accuracy and execution speed. The advantages of the recommended method are that it may be utilized for newcomers at a gym, as well as people who exercise at home.

Index Terms:

AI-based Virtual Trainer, Computer vision, AI model, OpenCV

Helmet Integrated Systems Powered by IOT Technology

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Abstract:

As the world stands up to the raising toll of street mishaps, Smart helmet develops as a guide of trust, illustrating the transformative control of innovation in defending the lives of two-wheeler riders. This groundbreaking advancement rises above the boundaries of ordinary protective caps, consistently coordination real-time observing, mishap location, and crisis reaction highlights into a bound together security solution. Smart helmet lies a modern arrange of sensors and IoT innovation, shaping an complicated web of network that bridges the service between the rider and crisis administrations. This mechanical wonder empowers nonstop observing of the rider's crucial signs, giving a real-time window into their wellbeing status. Within the occasion of an mischance, Smart helmet's sensors distinguish sudden impacts or falls, activating an quick caution to crisis responders and assigned contacts. The proactive approach embraced by Smart helmet revolutionizes the concept of rider security. By disposing of the delays regularly related with mishap announcing and reaction, Smart helmet guarantees that restorative help is dispatched with unparalleled quickness, essentially expanding the probability of survival and decreasing the seriousness of injuries. Smart helmet stands as a image of trust for a more secure future for two-wheeler riders. Its consistent integration of real-time observing, mischance discovery, and crisis reaction capabilities speaks to a worldview move in rider security innovation. By saddling the control of IoT and real-time information, Smart helmet changes the humble protective cap into a gatekeeper blessed messenger, standing vigil over each ride and guaranteeing that riders are never alone in times of crisis. The appearance of Smart helmet envoys a unused period in street security, where innovation enables riders with a sense of security and certainty, knowing that offer assistance is fair a pulse absent. With Smart helmet, the travel gets to be not simply a implies of transportation but a confirmation to the immovable commitment to rider security and the fansaithful conviction within the control of innovation to create a contrast.

Index Terms:

Smart helmet, Live monitoring, Smart Helmet, Internet of Things (IOT), GPS & GSM Technology, Accident Detection, Bike Rider's Safety

Transformational Leadership Qualities, Performance of School Administrators and Teachers' Self-Efficacy: Basis for Transformational Leadership Model

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Abstract:

The purpose of this study is to examine the relationship between transformational leadership and teachers' self-efficacy through analysing school administrators' performance – in terms of instructions, research and extension – and quality.

The study made use of a combination of the descriptive and correlational methods of research. The descriptive design helped the researcher to characterize the leadership performance of the school administrators and their qualities. The correlational approach was used to determine the magnitude of the relationship between the leadership performances and qualities of the school administrators, and teachers' efficacy of the participating state universities. The study utilized the descriptive–correlational method as a quantitative research design. It involved participants who were school administrators and regular faculty members of state universities in the province of Cavite, with a total enumeration of 226 participants accounted in the study with the participation of 51 school administrators. Questionnaires were the primary instruments in data gathering which were developed by the researcher. The data collected were analyzed using the use of median, frequency, percentage, Kruskal–Wallis, Friedman's, and Spearman Rank Correlation Coefficient.

The data revealed that as per the level of the following transformational leadership quality of the school administrators, the majority of the participants constitutes Very Satisfactory level of transformational leadership by their leaders and Inspirational Motivation obtained Excellent verbal interpretation, and this implies that participants were satisfied as to transformational qualities of their leaders, with a high regard for Inspirational Motivation. In terms of performance, leaders manifesting high performance in the three-fold areas obviously showed Very Satisfactory performance in terms of Instructions, Research and Extension, Over-all results showed that the school administrators' performance and qualities highly influenced teachers' efficacy.

Index Terms:

Transformational Leadership, Individualized Consideration, Intellectual Stimulation, Inspirational Motivation, and Idealized Influence, and Transformational Leadership Model



The Balancing Environmental Conservation and Livestock Farming with Holistic Approach to Agrifood Sustainability

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Abstract:

The dynamic of interplay between environmental conservation and livestock farming poses a critical challenge in achieving sustainable agrifood systems. This study explores a comprehensive, holistic approach to navigating the complex relationship between livestock farming practices and environmental preservation. We examine the impact of livestock operations on ecosystems, biodiversity, and natural resources, seeking avenues to optimize food production without compromising environmental integrity. The aims of this paper are to contribute insights toward sustainable agrifood systems. Examining the impact of livestock operations on ecosystems and natural resources, this study seeks avenues to optimize food production without compromising environmental integrity. The holistic approach advocated involves sustainable land management, integration of farming and livestock systems, and the implementation of green technologies. Addressing global challenges such as climate change, the paper advocates for adaptive measures essential for long-term agrifood sustainability. Active engagement of diverse stakeholders, including farmers, governments, industries, and communities, is emphasized for collaborative solutions to achieve an optimal balance between productive farming and environmental conservation. By delineating challenges and opportunities, this paper provides a profound understanding of attaining agrifood sustainability through a holistic approach. It serves as a guide for policy planning and the implementation of sustainable agrifood practices in the future.

Index Terms:

Balancing Environmental Conservation, Livestock Farming, Holistic Approach, Agrifood

An Assessment of Application of Artificial Intelligence in Preservation of Indian Knowledge System in Terms of Vaastu Shastra in North Indian Context

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Abstract:

Since ancient times, computers have been taught to “think,” imitating human decision-making and pattern identification. The effectiveness of artificial intelligence has gotten stronger recently, accelerating up the advancement of science across many fields, enabling humanity to address problems that were previously impossible to overcome, and driving globalization. Numerous AI programs and applications have become indispensable for work-related duties. With software programs and applications in consideration, this paper seeks to connect them to the traditional Indian knowledge system alluded to as the Indian knowledge system. The term “science of architecture” refers to the Vastu shastra, a traditional Hindu system of architecture based on ancient texts that explain principles of design, layout, measurements, ground preparation, space arrangement, and spatial geometry. It is an ancient Indian knowledge system. Buildings that comply with vastu theory are currently created using software applications that bridge the Indian knowledge system. This can also be used for assessing current plans using the principles of Vastu Purusha Mandala. The approach employed for this study will involve a review of the literature, data mining, and data extraction, along with the identification of at least fifteen applications used for real estate vastu evaluations. Through online surveys with users, the program will subsequently be evaluated in terms of compliance, usability, and other various factors. The findings will go over several AI instruments connected to vastu shastra study and its uses. The findings will list all of the software applications and evaluate their importance in relation to the northern Indian states. On a scale of 1 to 10, the effectiveness of the applications under study was determined using 100 samples from an online survey created by Google.

Index Terms:

Artificial Intelligence, Indian Knowledge System, Vaastu Shastra, North Indian Context

Training Needs and Program of BSIT Faculty in Selected Campuses of Cavite State University: Basis for Policy Enhancement

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Abstract:

The proposed study aimed to contribute to the existing literature generally on the training needs and program of BSIT faculty and to enhance a policy that would support and sustain the professional growth of all faculty. The final output of the study could have been useful to the school administrators of the different campuses of Cavite State University, as it could have been used as a guide and template in decision-making towards enhancing its faculty development program policy. Hence, this study was conducted to find out the training needs of BSIT Faculty in CvSU – CCAT and other satellite campuses and assess the Industrial Technology program to be used as basis for policy enhancement.

Descriptive research design was used to determine the significant difference between respondents' assessment on the training Needs and program of BSIT in Selected Universities and Colleges and the problems encountered to develop and proposed policy enhancement.

Based on the findings of the study, the conclusions include: 22.92% of BIST faculty were bachelor's degree graduates, 62.2% participated in non-formal local training, 3.57% in international training; for specialization, 50.59% participated in local training and 1.78% in international training; no significant relationship was found between academic preparation and faculty performance; and inputs to policy formulation could bridge gaps between current policies and accrediting agency evaluation criteria for faculty qualifications.

Index Terms:

Training Needs, BSIT, Cavite State University

Machine Learning approaches for prediction and prevention of Daily Crimes

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Abstract:

Daily crimes pose significant challenges to law enforcement agencies and communities worldwide. Predicting and preventing these crimes is essential for maintaining public safety and reducing the burden on law enforcement resources.

Index Terms:

Machine Learning, Daily Crimes

The Interplay of Aristotles Rhetorical Triangle in Sangguniang Kabataan Political Campaign Speeches A Rhetorical Discourse Analysis

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Abstract:

This study employed rhetorical discourse analysis to examine the rhetorical appeals employed by Sangguniang Kabataan chairperson candidates in their political campaign speeches. Thematic analysis was also used to identify the general themes drawn from the analyses. Gagich & Zickel's key linguistic characteristics served as a framework to identify linguistic characteristics present in the speeches of the selected candidates. Our focus, as researchers, centered on analyzing the rhetorical appeals present in ten campaign speeches delivered by SK chairperson candidates, originating from both urban and rural barangays in General Santos City, disseminated on the social media platform Facebook. Throughout the data collection process, our findings revealed that in urban barangays, pathos had the highest percentage, followed by logos, with ethos being the least utilized appeal. Conversely, in rural barangays, logos emerged as the predominant appeal, followed by pathos, while ethos remained the least utilized. Moreover, the linguistic characteristics of "elaboration", "emotion-laden vocabulary," and "credibility" surfaced as the most frequently employed. Distinct themes such as Credibility and Qualifications, and Youth Empowerment through Education were identified in the speeches. Based on the results of this study, we recommend that voters familiarize themselves with Aristotle's Rhetorical Triangle, which empowers them to analyze political discourse discerningly, distinguishing credibility, well-founded arguments, and appeals rooted in emotion.

Index Terms:

Aristotle's Rhetorical Triangle, Political Campaign Speeches, Rhetorical Discourse Analysis

Are Social Media Platforms in India Overly Regulated?

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Abstract:

The administrative and legal ecosystem in India has acknowledged the potent impact of social media platforms on social order and the ensuing legal and regulatory repercussions over the past decade. The existing legal framework regarding social media platforms in India signals towards a co-existing regulatory scenario thereby relying on both statutory as well as self-regulatory mechanisms for social media platforms. The paper therefore gives rise to a critique about social media regulatory framework in India and the provocative (IT Technology guidelines & digital media ethical code rules) 2021 from the perspective of fundamental principles of Free Speech. The authors herein do develop deep into the notion of free speech which may have adverse impact by such impositions of add on responsibilities such as appointing Indian based compliance officials, traceability requirements pertaining to first originator, putting in place automatic filtering centric software, identifying address(physical) from the account users and such related restrictions as may be imposed on social media platforms through (*IM rules-2021*). It is argued that *IM Rules-2021* does need scrutiny from the lenses of Free Speech keeping in view above mentioned issues and concluded that such rules are thought to be taking over some important legal notions and are being argued to be the result of overreaching legislative attempt.

Index Terms:

Media Law, Indian Constitution, Regulatory Mechanisms, Free Speech, Social media platform

Image Up-scaling Via Generative Adversarial Neural Networks

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Abstract:

In the sphere of calculating vision and representation prepare, the search for accomplishing higher concept determinations outside compromising basic facts has long happened an lasting challenge. Common upscaling methods frequently fail, happening in a loss of loyalty and the debut of undesirable artifacts. However, the rise of Fruitful Opposing Networks (GANs), a radical deep learning foundation, has unlocked up new potential in the domain of concept augmentation. This research presents a novel approach that influences the capacity of GANs to address the perennial issue of figure upscaling. Our project design to not only increase concept resolution but further improve the overall figure status. We aim to achieve this by lowering clamour, reconstructing color contrast, and effectively weigh gloss over and blacks to reinforce the illumination conditions, specifically in satanic figures.

Index Terms:

Computational Photography, Image Processing, Generative Models

Image Caption Generator using Transformer

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Abstract:

In the realm of Computer Vision and Natural Language Processing, the fusion of Convolutional Neural Networks (CNN) and Transformers represents a pivotal research area. Image caption generator aims to generate textual captions for image automatically using a combination of CNN for efficient feature extraction from images, and Transformer encoder-decoder architecture for caption generation. The Transformer architecture is known for its capability to capture long-range dependencies in text data, making it suitable for generating informative and content-aware image captions. The primary objectives involve investigating model's efficiency, exploring novel techniques to improve image understanding and evaluating its performance against existing methods. Our key message is the promise of more accurate and semantically meaningful image captions with implications for accessibility, image indexing and human-computer interaction.

Index Terms:

Image Processing, Encoder-Decoder, Transformers

Effects of Taro Root Crop Extract (*Colocasia esculenta*) on the Compressive Strength of Compressed Earth Blocks

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Abstract:

Background of the study: The sustainable development of built environments in developing countries necessitates innovative approaches to construction materials. Utilizing local resources can significantly contribute to sustainable practices. Soil as a construction material offers the most economic and effective alternative toward solving the huge demand for low cost housing units (Sujatha, E. R, 2018). This study explores the effects of incorporating Taro root crop extract (*Colocasia esculenta*) into compressed earth blocks (CEBs) to enhance their compressive strength. CEBs are renowned for their durability and suitability for various climates, making them a promising building material *. The research objectives include assessing the physical properties and compressive strength of CEBs infused with Taro root crop extract and determining the optimal ratio for maximum strength enhancement. Taro (*Colocasia esculenta*) is a root crop that remains largely underutilized and undervalued (Ferdous, et. al., 2023)

Methodology: The methodology employed in the study involved a systematic approach to gather materials, prepare samples, conduct tests, and analyze data. Initially, a variety of materials including soil, screened sand, Portland cement, tap water, and Taro root crops extract (*Colocasia esculenta*) were collected. Soil was sourced from a specific location in Palawan, Philippines while Taro plants were harvested from the mountains of Palawan, Philippines. The Taro roots underwent cleaning, washing, and cooking processes before extraction. Formworks were then fabricated using lumber to create molds with precise dimensions for block formation. Different mixtures (see table 1) were formulated, with varying percentages of Taro root crops extract, to create distinct treatments. Components were manually mixed and compressed into molds to form blocks. Subsequently, the blocks underwent a curing process for 7, 14, and 28 days, submerged in tap water to maintain moisture levels. Testing was conducted using a Universal Testing Machine to assess compressive strength, while density and water absorption were also measured. Additionally, soil classification was performed using the Unified Soil Classification System. Data analysis involved employing ANOVA to identify significant differences between treatment means. The selection of the best mixture was based on statistical analysis considering density, water absorption, and compressive strength.

Treatment	Screened Sand	Soil	Portland Cement	Taro Root Crops Extract (<i>Colocasia esculenta</i>) (mixed to water)
T1 (Control)	40%	50%	10%	0
T2	40%	50%	10%	1% (soil mix)
T3	40%	50%	10%	2% (soil mix)
T4	40%	50%	10%	3% (soil mix)
T5	40%	50%	10%	4% (soil mix)
T6	40%	50%	10%	5% (soil mix)

Results and Conclusion: The study reveals that CEBs with Taro root crop extract exhibit improved compressive strength, with Treatment 6, containing 5% Taro root crop extract, demonstrating the highest mean compressive strength. Furthermore, the findings highlight significant differences among treatment groups, indicating the effectiveness of Taro root crop extract in enhancing CEB properties. The study underscores the potential of Taro root crop extract as an additive material for enhancing CEB properties, including density, water absorption, and compressive strength. These enhanced properties render CEBs with Taro root crop extract suitable for walkways and masonry construction projects, offering a sustainable solution for building materials in developing regions.

Index Terms:

Taro Root Crop, *Colocasia esculenta*, Compressive Strength, Compressed Earth Blocks

Designing an Image Analysis System to Detect Deep Fakes

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Abstract:

The emergence of deepfake technology, which utilizes artificial intelligence to create highly realistic manipulated videos and images, poses a significant challenge to the authenticity and integrity of digital media. Deepfakes can be employed for malicious purposes, such as spreading misinformation, damaging reputations, and interfering with political processes. Deepfake detection methods primarily focus on identifying subtle inconsistencies and artifacts introduced during manipulation. These techniques often employ deep learning algorithms trained on authentic and deepfake media datasets. These algorithms can effectively distinguish between genuine and manipulated content by analyzing facial features, head movements, and other visual cues. Deep fake detection is the task of identifying and verifying the authenticity of multimedia content that has been manipulated or synthesized using deep learning techniques. We delve into the use of deep learning not only for generating but also for identifying deepfakes.

Index Terms:

Artificial Intelligence, Deep Learning, Facial Features

Voice-Enabled Supply and Labor Management Web App for Contractors

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Abstract:

The construction industry, a driving force behind societal development, relies on efficient daily work activities, including supply deliveries, to meet project demands. Contractors, as key players in this industry, often grapple with challenges in tracking and managing supplies, a process made even more complex for those with visual impairments. This project is intrinsically motivated by a deep commitment to improve the work management experience for contractors. Our goal is to offer an innovative and accessible solution that streamlines the data entry process while enhancing accuracy and efficiency.

The core innovation of this project lies in its utilization of speech recognition technology to convert voice messages into text, thereby simplifying data entry. The generated textual data is stored systematically in Excel format, providing a foundation for robust data categorization and easy retrieval. Data categorization is further augmented by organizing supply data based on laborers and work types, enabling efficient management and analysis. On-demand daily summaries of supply activities are a standout feature, offering contractors a convenient overview of the day's work. To enhance data security, the application extends its functionality to provide data backup through email reports.

Index Terms:

Voice Recognition, Web Application, Data Storage, Categorization, Summarization, Accessibility, Email Reports, Streamlit

A Contemporary Method for Custom User Segmentation Implementing K-Means Cluster

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Abstract:

Making informed decisions is necessary for every business to be profitable. These days, every business is striving for advancement through a distinct set of strategies, and there is fierce rivalry. Based on evidence, we should make an informed decision. We don't know what our clients want to buy or what they appreciate because they are all different. However, one may employ machine learning approaches to filter through the data and pinpoint the target group by applying a range of algorithms to the dataset. Without this, it will be very difficult to find a group of people with similar personalities and interests inside a large dataset, and there are no better techniques. In this instance, K-Means clustering is applied to customer segmentation, which helps the business by organizing data based on shared attributes. Before the data is eventually provided, the number of clusters will be ascertained using the elbow technique. The project's strengths in K-Means Clustering led to improved customization, effective resource use, and a competitive edge. This creative approach is a significant advancement in the field of customer segmentation and provides businesses with the tools they need to prosper in a business environment that is becoming more complicated and focused on the needs of its clients.

Index Terms:

K-Means Algorithm, Customer Segmentation, Clustering, Elbow Method, Visualization

Environment Monitoring Using Water and Air Quality Index

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Abstract:

This research introduces an innovative approach to environmental monitoring by predicting water and air quality indices. Leveraging advanced machine learning and deep learning techniques, our integrated system aims to provide timely insights for proactive ecological management, addressing the escalating challenges of environmental sustainability. There are some previous studies which depicts the prediction of water quality index and air quality index using various machine learning techniques but the results are uncertain for classification of categories. The base paper used in this research for water quality index uses support vector machines (SVM), Naïve Bayes (NB), random forest (RF), k-nearest neighbour (KNN), and gradient boosting (XGBoost) algorithms and the drawback of that study was it was able to predict "Good" and "Fair" water quality but had some issues with "poor" category of it. This paper aims to improve that model by replacing machine learning models with ensemble models which includes combination machine learning and deep learning algorithms like Random Forest (RF) and ANNs, K-nearest neighbour (KNN) and LSTMs etc. In addition to this, study includes prediction of air quality index in our research to check how AQI performs in ensemble models, thus integrating together both AQI and WQI predictions in our research.

Index Terms:

Environment Monitoring, Water and Air Quality Index, Support Vector Machines (SVM), Naïve Bayes (NB), Random Forest (RF), k-nearest neighbour (KNN), Gradient Boosting (XGBoost)

Leveraging Stable Diffusion to Improve Rare Disease Detection and Diagnosis

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Abstract:

Rare diseases, characterized by their low prevalence and the associated data scarcity, pose a substantial challenge in the field of medical research and diagnosis. This paper introduces a novel conceptual approach to address this challenge by leveraging Stable Diffusion, an advanced generative model. The core idea revolves around generating a larger dataset of rare diseases from a small, constrained dataset using the capabilities of Stable Diffusion.

The proposed approach, while not presenting specific implementation details or experimental results, holds the potential for transformative outcomes. Anticipated benefits include enhanced diagnostic accuracy, expanded research capabilities, and the development of more robust machine learning models for rare disease identification. This conceptual framework serves as an invitation to the research community to explore, experiment, and validate the concept, contributing to the ongoing efforts to improve rare disease diagnosis and research. While the actualization of this approach awaits empirical validation, it underscores the promise of innovative solutions for data scarcity in the realm of rare diseases, ultimately aiming to enhance healthcare outcomes and expand our knowledge in this critical domain.

Index Terms:

Stable Diffusion, Rare Diseases, Data Scarcity, Generative Model

“FloraGuard”: Advanced Plant Health Monitoring

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Abstract:

Leaf diseases pose a substantial threat to global agriculture, impacting crop yields and food security. Traditional methods of disease detection often prove time-consuming and labor-intensive, leading to delayed responses and increased losses. In response to this challenge, our research introduces an innovative solution that combines the power of deep learning techniques with targeted treatment recommendations.

Our methodology involves the development of a sophisticated deep learning model trained on a diverse dataset comprising images of leaves affected by various diseases. This model excels in accurate disease classification, enabling it to provide specific and nuanced treatment recommendations based on the identified pathogens. The integration of a user-friendly interface ensures accessibility for farmers with varying technological expertise, fostering seamless interaction with the system.

Extensive field trials conducted across diverse geographical regions and crop varieties validate the adaptability and reliability of our approach. The results affirm the potential of our system as a practical and scalable solution for real-world implementation in various agricultural settings.

Beyond accurate disease identification, our system contributes to sustainable farming practices by offering precision treatment strategies. By understanding the specific pathogens causing the disease, farmers can implement targeted interventions, reducing the reliance on broad-spectrum treatments and minimizing environmental impact.

In conclusion, our research presents a transformative paradigm for leaf disease management, combining the strengths of advanced deep learning technology, real-time processing, and user-friendly interfaces. This holistic approach positions our model as a valuable tool for farmers, empowering them with actionable information for informed decision-making, ultimately contributing to increased agricultural sustainability and food security.

Index Terms:

Deep Learning, Precision Treatment, Intelligent Agriculture, Leaf Disease Detection, Sustainable Farming

Currency Detector App for Visually Impaired People

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Abstract:

People who are visually impaired often find it challenging to conduct financial transactions. Because the sizes and textures of the paper in different categories are similar, they are unable to distinguish the different types of currency. Patients with visual impairments may identify and detect money with the use of our money detector software. With the use of this program, impaired users may speak and provide commands to activate their smartphone's camera, which will take a photo of the note and pronounce the amount to them. The directive issued by the blind patient is converted from speech to text using this Android project. With the help of speech recognition technology, users may speak commands into the devices.

This Android app reads the note's value using the text-to-speech approach. Your smart phone becomes a useful helper with the aid of this Android app. impaired people may use simple voice commands to turn on the camera and take a picture of any bill. The software interprets the instruction and translates it to text quickly thanks to its sophisticated speech recognition technology. The program then plainly and immediately declares the bill's denomination by utilizing advanced text-to-speech features. By enabling blind users to execute financial transactions independently, this seamless integration of voice recognition and text-to-speech builds their confidence and sense of control over their daily life.

Index Terms:

Voice Command Integration, Image Recognition, Note Identification, Text-To-Speech, Custom Vision API

“Enhancing Efficiency and Security in Automated Public Lighting Systems”: A Comprehensive Approach Integrating Cost-effective Statistical Techniques, Seamless Integration Methodologies, and Advanced Models for Predictive Maintenance and Cybersecurity Measures

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Abstract:

By controlling and managing outside lighting frameworks openly puts by means of innovation, robotized public lighting can upgrade energy proficiency and improve wellbeing. Two potential obstacles to the widespread adoption of controlled public lighting are the initial costs associated with installing the necessary equipment and any compatibility or integration issues with the system. Furthermore, there are progressing difficulties to keeping a compelling mechanized lighting framework, for example, staying aware of intermittent upkeep and managing online protection gambles. Monetary worries, combination troubles, and network protection gambles are at the core of the issue explanation, which centers around the difficulties looked by existing mechanized public lighting frameworks. It proposes an extensive methodology to upgrade the wellbeing and viability of mechanized public lighting frameworks by consolidating minimal expense factual systems with consistent combination draws near and high level models for prescient support and online protection measures. We focus on consistent reconciliation strategies to address framework similarity difficulties and utilize savvy measurable procedures in innovation sending to relieve starting monetary weights. To guarantee the computerized public lighting framework is persistently productive and secure, we carry out cutting edge factual models for prescient upkeep and hearty network safety measures. By lessening time-intricacy while simultaneously further developing exactness, accuracy, and effectiveness, the proposed mechanized public lighting framework outperforms the current framework. This is all made conceivable by involving progressed models for network protection and prescient support, along with savvy measurable systems and consistent incorporation techniques.

Index Terms:

Automated Public Lighting, Technology Control, Outdoor Lighting Systems, Energy Efficiency, Safety Enhancement, Financial Burdens, System Integration, Cybersecurity Challenges

A Comparison of Knowledge about Schizophrenia among Primary Family Caregivers and Other Family Members of People with Schizophrenia

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Abstract:

Schizophrenia is a severe and chronic mental illness. In Indonesia, most people with schizophrenia are taken care of by their families. Psychoeducation about schizophrenia is usually more directed to the primary caregiver. Meanwhile, other family member's insufficient understanding of schizophrenia can lead to negative consequences for themselves and their family member with schizophrenia. Therefore, this cross-sectional study aimed to compare the level of knowledge regarding schizophrenia between primary family caregivers and other family members of people with schizophrenia. We included 94 primary family caregivers and 94 other family members of individuals with schizophrenia. We assessed the knowledge regarding schizophrenia through the Indonesian version of the Knowledge About Schizophrenia Test (KAST) and analyzed the data using the Mann-Whitney test. Primary family caregivers exhibit notably superior knowledge about schizophrenia compared to other family members across various domains, including overall scores ($p=0.0001$), diagnosis ($p=0.0001$), symptoms ($p=0.005$), etiology ($p=0.002$), medication ($p=0.001$), and management ($p=0.0001$). However, no significant differences were observed between the two groups regarding knowledge related to the course and prognosis of the disease ($p=0.222$). The findings indicate that primary family caregivers possess significantly greater knowledge about schizophrenia compared to other family members of individuals with the disorder.

Index Terms:

Schizophrenia, Mental illness, Psychoeducation, Knowledge About Schizophrenia Test (KAST)



Learning Management System with Performance and Attendance Monitoring for ISPSC

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Abstract:

Addressing the need for efficient learning management in higher education, this paper presents the design, development, and deployment of an open-source Learning Platform tailored for Ilocos Sur Polytechnic State College. This novel platform integrates performance and attendance monitoring to enhance the educational experience and promote quality assurance. The system leverages Moodle on a robust server infrastructure, prioritizing user-friendliness for instructors and students. Instructors can manage courses, deliver materials, assess performance, and track attendance. Students benefit from a centralized platform for content access, assignments, collaboration, and progress monitoring. A key feature is the integrated performance and attendance monitoring, providing valuable data for internal evaluation and curriculum improvement, ultimately enhancing the quality of education at ISPSC. The paper concludes by discussing the role-based access control implemented to ensure data security and system integrity. This research contributes to the development of open-source LMS and its potential to revolutionize teaching and learning practices, empowering institutions like ISPSC to achieve a more holistic approach to education and foster quality learning experiences.

Index Terms:

Learning Management System, ISPSC

An Intelligent Mobile Application for Detecting Tobacco Leaf Diseases for Candon City, Ilocos Sur

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Abstract:

Tobacco cultivation, deeply rooted in global agricultural history, holds significant cultural and economic importance, particularly in regions like Candon City, Ilocos Sur, Philippines. Despite its cultural significance, tobacco cultivation faces challenges, including diseases threatening crop yield. Traditional disease detection methods are inadequate, necessitating innovative approaches. Leveraging mobile technology and advanced machine learning techniques, this study developed an intelligent mobile application for tobacco leaf disease detection in Candon City. Employing the Design Thinking framework, the researcher empathized with stakeholders, defined issues, ideated solutions, prototyped, and tested the application. Using an Agile-Waterfall Hybrid Development Methodology, the system was developed iteratively. A dataset comprising 1,400 images was prepared and a CNN-SVM algorithm was employed for disease detection. The model achieved high accuracy and was deployed into the mobile application using TensorFlow.js. The application features mobile compatibility, real-time disease classification, and user-friendly interface. System usability was evaluated, resulting in high scores across metrics with a grand mean of 6.34, indicating strong user satisfaction and usability. This application represents a technological innovation empowering tobacco farmers and enhancing crop sustainability.

Index Terms:

Intelligent Mobile Application, Tobacco Leaf Diseases

IoT-based Decision Support System for Poultry care for Ilocos Sur Polytechnic State College

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Abstract:

The escalating global demand for high-quality agricultural products necessitates innovative approaches to meet future requirements sustainably. Poultry farming, a cornerstone of the agricultural sector, faces persistent challenges including disease outbreaks and environmental sustainability concerns. To address these challenges, stakeholders are increasingly turning to technological solutions such as the Internet of Things (IoT) for enhanced monitoring and management. This research focuses on designing and implementing an IoT-based Decision Support System for Poultry Care tailored to the needs of the Ilocos Sur Polytechnic State College (ISPSC) Sta. Maria Campus Egg Production Facility in the Philippines. Leveraging the Design Thinking framework and Agile Software Development Life Cycle, the system enables real-time monitoring of critical parameters such as temperature, humidity, and gas toxicity within poultry houses. The system aims to provide early warning mechanisms for proactive interventions, ensuring optimal conditions for poultry health and productivity. Usability evaluation results indicate strong agreement among users regarding the system's effectiveness, ease of use, and overall satisfaction. This study underscores the potential of IoT technologies to drive sustainable growth, improve productivity, and enhance decision-making in poultry farming operations.

Index Terms:

Decision Support System, Poultry care, Internet of Things (IoT)

Breast Cancer Prediction using Deep Learning (Resnet and CNN algorithm)

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Abstract:

Breast cancer is a prevalent and potentially lethal illness that needs to be identified early on for a complete recovery. One class of artificial intelligence (AI) technique that has demonstrated promise in improving breast cancer prediction is deep learning algorithms. In order to propose a novel approach for breast cancer prediction, we have combined the approaches of Convolutional Neural Network (CNN) and Residual Neural Network (ResNet) in this research. This framework's goal is to maximize efficiency and accuracy by combining the advantages of both approaches. Our dataset includes mammography images and clinical information from patients who have been diagnosed with breast cancer. CNN and ResNet algorithms are utilized to extract features from the mammography images and classify them into groups that are benign and malignant. By training the models on this dataset, the algorithms acquire the ability to identify minute patterns and abnormalities symptomatic of breast cancer. The suggested approach shows promise as a useful tool for high-accuracy breast cancer prediction. Moreover, the deep learning models greatly diminish the necessity for human analysis, resulting in quicker and more precise diagnosis. When CNN and ResNet algorithms are used for feature extraction and classification, good outcomes are obtained. Overall, this work contributes to the ongoing attempts to develop accurate and reliable methods for early breast cancer identification and shows how deep learning algorithms may improve healthcare outcomes.

Index Terms:

Mammography Pictures, Early Detection, Classification, Feature Extraction, Accuracy, Deep Learning, ResNet, Convolutional Neural Network, Breast Cancer



Teachers' Assessment and Challenges on Teaching Tertiary Physical Education Program

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Abstract:

This study reports the teachers' assessment on the effectiveness of tertiary physical education (TPE) program. Moreover, this study documents their challenges in teaching TPE. There were 16 teacher-participants involved in the study. An adapted questionnaire to assess TPE and an interview to the participants followed to document their challenges in teaching PE. Results exhibited that the TPE components, specifically, policy and environment, curriculum, appropriate instruction, student assessment, professionalism of physical education teachers, were highly practiced by the participants. This resulted to an overall teachers' assessment on TPE program as highly practiced. Moreover, teachers claimed that their challenges in PE classroom include large number of students per class; no permanent classroom; challenging task as teacher, adviser and coach; and demanding college requirement. This implies that despite PE teachers have shown to have highly practiced components for PE, their challenges sometimes hinder them to provide quality education to their students. With this, the researchers recommend that University officials have to address the concerns by reducing class sizes to improve student management; providing PE spaces; offering development opportunities for teachers; and fostering a culture of understanding and support within the institution.

Index Terms:

Appropriate Instruction, Curriculum, Student Assessment, Policy and Environment, Professionalism of Physical Education Teachers, Physical Education Program, Teachers' Challenges

Conceptual Design of Ergonomic Vehicle Seat with Battery Charger for Aircraft

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Abstract:

The aviation industry has witnessed significant advancements in the design of aircraft seats, Ergonomic seating, a recent innovation in this field, has become essential for addressing the evolving needs of modern air travel. This abstract introduces a conceptual design for an ergonomic vehicle seat with a built-in battery charger tailored for aircraft use. As air travel continues to grow and passengers spend more time on planes, there is a growing emphasis on improving in-flight experiences. One pressing challenge is to provide ergonomically designed seats while accommodating the increasing demand for in-flight electronic device charging. This conceptual design integrates a battery charging mechanism directly within the seat, ensuring passengers have a continuous power source for their electronic devices. This innovation not only caters to passengers' digital demands but also aligns with the aviation industry's commitment to sustainability. By reducing reliance on external power sources, it fosters greater efficiency and environmental responsibility in aviation operations. This paper explores the technical and ergonomic aspects of the seat's design, discusses the incorporation of a cutting-edge battery charging system, and assesses its potential impact on passenger well-being and overall sustainability in aviation. The conceptualization of an ergonomic vehicle seat equipped with an integrated battery charger represents the aviation industry's dedication to relentless innovation, aiming to provide passengers with a personalized in-flight experience while addressing environmental concerns. This visionary concept epitomizes the future of air travel, where efficiency and exhilaration converge to create an exceptional journey.

Index Terms:

Ergonomic Vehicle Seat, Battery Charger, Aircraft, Aviation Industry, Battery Charging Mechanism



The Humanitarian Dimensions in Sema No. 2 of 2023 Concerning the Prohibition of Interfaith Marriages in Indonesia

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Abstract:

The Supreme Court Circular Letter Number 2 of 2023 instructs judges on how to process marriage registration petitions from people of different religions. This article analyzes it. Philosophical, juridical, and empirical-sociological perspectives will be used to analyze religious perspectives, legal concerns, inter-religious communication, legal advancements, human rights perspectives, and societal controversies. This study uses a juridical-normative research methodology with legislative, conceptual, and case approaches for descriptive-qualitative analysis. The study analyzes primary and secondary data. The data analysis method is content analysis. Interfaith marriages are illegal in Indonesia under Islamic law, other religions, socio-cultural norms, and the Marriage Law, according to a study. Thus, the Constitutional Court banned interfaith marriages many times, which the Supreme Court upheld in Supreme Court Circular Letter Number 2 of 2023. These verdicts are justified as follows: From a philosophical perspective, interfaith marriages contradict common values. Pancasila and constitutional foundations. Interfaith weddings are also incompatible with the Marriage Law because the state wants to protect religious customs and ensure legal compliance. Sociologically, interfaith marriages violate many religious and local norms. Circular Letter Number 2 of 2023 affects foreign interfaith weddings. These include the rejection of marriage registration applications and the nullification of marriages. Thus, such marriages are regarded as nonexistent.

Index Terms:

Supreme Court Circular, Interfaith Marriage, Legal Consequences

Attitude, Subjective Norm and Behavioral Control of Students: A Sem on Their Intention to Enroll in Business Programs

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Abstract:

The study's general objective was to develop the best fit model that predicts the intention of senior high school students in Davao Region to enroll in business program. The study used a non-experimental quantitative research design and Structural Equation Modelling. The study's respondents, randomly chosen from a total of four hundred (400) senior high school students in Davao Region. The researcher adopted the contextualized four survey questionnaire. Mean, pearson product moment correlation, and structural equation modelling were the statistical tools used for data treatment. The findings revealed that the level of perceived behavioral control and intention to enroll was high, while attitude was very high and subjective norm as moderate. A significant relationship was shown between all latent exogenous variables and the endogenous variable intention to enroll. When regressed, it was discovered that attitude and behavioral control influence intention to enroll with exclusion of subjective norm. Structural Model 5, which depicted the direct causal relationships of attitude, subjective norm, and perceived behavioral control to the intention to enroll in business program, was founded to be the best fit.

Index Terms:

Attitude, Subjective Norm, Behavioral Control, Intention To Enroll, Senior High School Students, Non-Experimental Quantitative, Structural Equation Modelling, Philippines

A Framework for the Development of Sharing and Collaboration of Cyber Threat Intelligence for Colleges in Camarines Norte

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Abstract:

The increasing prevalence of cyber threats targeting educational institutions necessitates effective sharing and collaboration of cyber threat intelligence among schools. This research presents a framework designed to facilitate the secure and efficient sharing, storage, analysis, and collaboration of cyber threat intelligence data among schools. The focus of this paper is on the architectural design of the framework, highlighting the key components, integration points, functionalities, and workflows.

The methodology employed in this research involves designing and validating the framework through a systematic approach. The design is underpinned by the Input-Process-Output (IPO) model, which guides the construction of key workflows such as data ingestion, analysis, collaboration, and incident response. The architectural overview of the framework demonstrates its key components and their functionalities. The proposed framework incorporates the Malware Information Sharing Platform (MISP) as the core platform for storing and managing cyber threat intelligence data. Amazon Web Services (AWS) are integrated to enhance scalability, security, and data processing capabilities.

The workflows encompass data ingestion, analysis, collaboration, and incident response processes, showcasing how the framework enables seamless sharing and collaboration among participating schools. The paper discusses the rationale behind the design decisions, emphasizing how the framework addresses the unique challenges faced by schools in managing cyber threats. While the prototype implementation is left for future work, the architectural design and workflows provide a foundation for understanding the framework's structure, functionality, and potential benefits for educational institutions. This research contributes to the field by presenting a comprehensive architectural design and workflows that enable effective sharing and collaboration of cyber threat intelligence among schools, fostering a collective and proactive approach to cybersecurity in the educational sector.

Index Terms:

Amazon Web Services, Architectural Design, Cyber Threat Intelligence, Collaboration, Information Sharing, Framework, Malware Information Sharing Platform

The Utilization of Protease Enzymes in Arum Manis Mango (MANGIFERA INDICA LINN) Sap to Tenderize Beef Meat

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Abstract:

This research is motivated by the needs of Indonesian people who consume a lot of beef and also mango fruit whose other parts are often discarded such as sap. The quality of the meat used is still far from good because cow in Indonesia are used as laborers so they are less tender. Meanwhile, mango sap, which is generally discarded, has protease enzymes contained can soften the meat. This study uses meat tensile strength test research method using the hamstrings. The protease enzyme that has been processed into flour and mixed with distilled water to become a marination solution. There are 4 samples used, namely control without treatment, P₀ with 0 minutes of marination, P₁ with 60 minutes of marination, and P₂ with 120 minutes of marination. Then all samples will be cooked at 75 degrees centigrade and 35 minutes. The laboratory test results showed positive results that showed a significant comparison of numbers. The hardest result achieved was in the control meat of 2.307 kg/cm². While the softest result is in P₁ with 0.931 kg/cm². These results indicate that protease enzymes can be used to tenderize beef.

Index Terms:

Mango, Enzyme Protease, Meat

The Impact of Climate Change on Mangrove Forest Productivity (Case Study Makassar. Maros)

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Abstract:

Mangrove Forest is an important ecosystem that provide a valuable social, economic, and environmental service. In Makassar and Maros, the absence of mangrove ecosystem will result to the long-term risk of disturbing the balance of ecosystem and lives in coast area in general. This study aims to analyze whether or not certain elements of climate such as rainfall intensity, air temperature, or salinity has an impact on the productivity of mangrove ecosystem in Makassar and Maros using pearson correlation analysis in SPSS. The result of this study shows that in Maros regency air temperature has a significant correlation with the growth of mangrove area land with significance of 0,038. However rainfall intensity and salinity in Maros regency don't have significant correlation with the growth of mangrove area land with each significance of 0,42 and 0,61. In Makassar city, analysis shows that no elements in climate has a significant correlation with the growth of mangrove area land, with the rainfall, temperature, and salinity's significance of 0,34, 0,14, and 0,97.

Index Terms:

Climate Change, Forest Productivity, Mangrove Forest, Ecosystem

Effectivity Test of Partial Replacement of Wheat Flour with Shrimp Head Flour on Risoles Skin Production

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Abstract:

This study aims to utilize the potential of shrimp head waste as flour raw material. Shrimp head waste is an abundant waste from the shrimp fishing industry in Indonesia. Despite its high nutritional value, this waste is often considered an environmental pollutant. This research focuses on the process of making shrimp head flour and its application in making rissoles skin.

The research method used is an experiment with data collection through questionnaires and documentation. Panelists involved in the study were asked to assess the organoleptic parameters of shrimp head flour rissoles, including color, aroma, taste, texture, and overall product.

The results showed variation in the panelists' acceptance level of rissoles based on the amount of shrimp head flour added. The rissoles formulation with 3% shrimp head flour addition is considered the most preferred choice by the panelists, it received the highest ratings in most organoleptic parameters. This formula produced good color, pleasant aroma, good taste, crispy texture, and a satisfying overall product. This research contributes to the development of rissoles products with added value from shrimp head flour. By adding shrimp head flour in the production of rissoles, not only it provides high nutritional added value, but also provides solutions to environmental problems through waste reduction. As a suggestion, further research can be focused on optimizing rissoles formulations to increase consumer acceptance level while maintaining the health aspects of shrimp head flour in food products.

Index Terms:

Shrimp, Shrimp Head Flour, Risoles

Development of Pawfect Tasks, A Gamified to do list Application for Enhanced User Productivity and Engagement

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Abstract:

Pawfect Tasks is a unique app on mobile phones that combines the idea of a conventional to-do list with elements of gamification, including virtual pets for improved user participation & engagement. The current study seeks to investigate the user experience and engagement in Pawfect Tasks and also determine how effective its gamified features are in promoting productivity and task completion while also making it fun. This survey goes through both qualitative and quantitative methods. In-depth interviews as well as user surveys form part of this research which explores user perceptions, motivations, and interactions within this framework. It thus becomes clear from the findings that the effectiveness of gamification strategies when applied to virtual pets influences users' motivation while using Pawfect Tasks altogether creating overall usability and satisfaction levels among users. The introduction of features to compete between Friends also proved to be a great experience for the users. Consequently, such results are important for developers who wish to create engaging productivity tools as well as contribute to the research field about gamification in mobile apps.

Index Terms:

Pawfect Tasks, Unique App, Mobile Phones, Gamification

Efficacy of the Learning Module to Enhance the Biochemistry Performance of Agriculture Students

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Abstract:

“One-group pre-test-post-test design” was conducted to determine the efficacy of the learning module on the biochemistry performance of agriculture students for the Second Semester Academic Year 2022-2023. The respondents of the study were 57 randomly chosen agriculture students taking the Biochemistry subject at the Iloilo State University of Fisheries Science and Technology-Dingle Campus for the second semester of the academic year 2022-2023. A 50-item multiple-choice summative test in biochemistry was administered during the pre-test and post-test. The number of questions was shuffled after the pre-test was conducted. This researcher-made test underwent validity, reliability, and item analysis. All the gathered data are computer-processed using the Statistical Package for Social Sciences (SPSS) software. The results revealed that the biochemistry performance in the pre-test of agriculture students, when taken as a whole, was low. When classified as to age, the range from 18-21 was low; however, the range from 22-up was average. When classified as to sex, it shows that both male and female respondents had a low biochemistry performance in the pretest. On the other hand, the biochemistry performance in the pre-test of agriculture students was classified as a section. The results revealed that section A got an average, while section E got a low. The biochemistry performance in the post-test of agriculture students, when taken as a whole, was high. When classified as to age, the range from 18-21 was high; however, the range from 22-up was very high. When classified as to sex, both male and female respondents were high in the post-test in biochemistry. The biochemistry performance in the post-test of agriculture students, on the other hand, when classified as to section, the results showed that both sections were high in the post-test in biochemistry. The results imply that modular teaching is more effective in teaching the learning process as compared to ordinary teaching methods. Because of this modular approach, the students learn at their own pace. It is a free self-learning style in which immediate reinforcement and feedback are provided to practice exercises, which motivate the students and create interest in them. The modular approach helps to maximize the chances of student participation in the classroom by fulfilling the given tasks on the spot. So the students feel free to learn in their own style. Older agriculture students performed better in the biochemistry subject using the modular approach. This research proved that modular teaching is a more effective approach. This method can be applied widely to other fields and subjects as well as other levels of education because this approach can fulfill the diversified learning needs of students of all levels. The modular approach is a unique way of teaching, so the teachers should be provided with enough training about how to design and implement a module in a classroom setting.

Index Terms:

Efficacy, Learning Module, Performance, Agriculture Students



Reading Comprehension Difficulties Encountered by ISCOF Freshmen Students in Face to Face Learning: Basis for Program Intervention

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Abstract:

A mixed-method research design was utilized to find out the extent of the reading comprehension difficulties encountered by the Iloilo State College of Fisheries (ISCOF) freshmen students in face to face learning at the Dingle Campus for Academic Year 2022-2023. The extent of the reading comprehension difficulties encountered by freshmen students taken as a whole was "slightly difficult" and when classified as to programs range from "less difficult" to slightly difficult". No significant difference in the extent of the reading comprehension difficulties encountered by freshmen students taken as a whole and classified as to programs. There are significant differences in the extent of the reading comprehension difficulties in terms of idioms and detailed information while no significant differences in terms of vocabulary, main idea, grammar structure, making inference, and locating reference when classified as to programs. Moreover, in terms of idioms significant differences existed between BSEd, BSA, BSICT, and BHM students. Likewise significant differences in terms of detailed information between BSEd, BSA, and BHM students and also significant difference between BSA and BSICT students. The learners encountered difficulties because of their limited vocabulary, decoding words, cannot understand unfamiliar words, identifying the main idea of the text read, not so familiar with the idioms, and in giving accurate detailed information from what they read. They suggested to continue reading in order to enhance their vocabularies and understand what they read. An intervention program was developed to reduce the reading comprehension difficulty level of the respondents.

Index Terms:

Reading Comprehension Difficulties, Face To Face Learning, Vocabulary, Main Idea, Grammar Structure, Idioms, Making Inference, Locating Reference, Detailed Information, And Intervention Program

Consumer Consumption Values, Confidence and Purchase Intention Toward Halal Online Food Delivery

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Abstract:

This study aims to examine the influencing factors of Muslim consumers' confidence and Purchase intention of Halal Online Food Delivery by applying Theory of Consumption Values (TCV) and Cognitive–Affective–Behaviour (CAB) model, in other words, this study intend to investigate the relationship among functional value– price, functional value – quality, social value, epistemic value, emotional value, conditional value and consumers' confidence. In addition, halal awareness will be extended from TCV as independent variable which expected to positively impact consumers' confidence. Furthermore, the moderating effect of religiosity will also be investigated to fill the gaps on the Muslim consumers' confidence and purchase intention in previous literatures. The expected outcome of this research is to determine a positive and significant effect of functional value– price, functional value – quality, social value, epistemic value, emotional value, conditional value and halal awareness towards Muslim consumers' confidence and religiosity will strengthen the relationship among of functional value– price, functional value – quality, social value, epistemic value, emotional value, conditional value and halal awareness towards Muslim consumers' confidence. The findings of this research will enrich the existing literature on Online Food Delivery especially in Halal context, it also will expand the concept of Theory of Consumption Values and CAB. Lastly, it also will provide Halal Online Food Delivery service some theoretical and practical implications on how to increase Muslim consumers' confidence.

Index Terms:

Consumption values, Religiosity, Halal Awareness, Attitude, Purchase Intention

Factor Influencing Customer Choice towards Telecommunication Provider

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Abstract:

The objective of this research is to examine the factors influencing customer choice towards a telecommunication provider (price, network quality, promotion, customer service, and brand image). The mediator role of customer satisfaction between independent variables and dependent variables and alternative attraction as a moderator role has been investigated. A total of 286 mobile service users participated in a survey conducted online and the hypotheses were tested with PL-SEM. Results from the research show that network quality and brand image have a significant relationship between customer satisfaction while price, promotion, and customer service was found insignificant. Meanwhile, mediating effect of customer satisfaction between network quality and brand image have a significant positive influence towards customer loyalty. Whilst mediating effect of customer satisfaction between price, promotion, and customer service to be insignificant towards customer loyalty. Furthermore, alternative attractiveness is identified as a moderator, weakening the relationship between customer satisfaction and customer loyalty. The adoption of the S-O-R paradigm emphasises the importance and usefulness of the selected theoretical framework in analysing consumer behaviour. This knowledge can help telecommunications companies develop ways to improve consumer experience and satisfaction. This investigation distinguishes out for getting into the unique elements that influence customer choices in the Malaysian telecommunications sector. The use of alternative attraction as a moderator brings another dimension to the understanding of customer loyalty characteristics in the telecommunications sector, providing new perspectives that add to the current research on customer behaviours in communication services. This investigation fulfils a critical gap by providing a specific analysis of the Malaysian context, which makes it an important and unique addition to the industry.

Index Terms:

Price, Network Quality, Promotion, Customer Service, Brand Image, Customer Satisfaction, Customer Loyalty, Alternative Attraction, Telecommunication Provider

Muslim and Non-Muslim Consumers' Attitude toward Halal Logo Placement in Media Impacting Purchase Intention

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Abstract:

The purpose of this study is to investigate consumers' attitudes toward the placement of the Halal logo in media and its influence on their purchase intentions. The research also aims to understand the role of various independent variables, including perceived religiosity, perceived cultural factors, awareness of the Halal logo, subjective norms, and perceived behavioral control, in shaping consumers' perceptions and responses to the Halal logo in different media platforms. This study employed a quantitative approach through Partial Least Squares-Structural Equation Modelling (PLS-SEM). Data were collected via a survey administered to 120 participants, encompassing a diverse sample of both Muslim and non-Muslim consumers. This methodology allowed for the rigorous examination of hypothesized relationships while accounting for the mediating role of attitude in influencing purchase intentions. The constructs theory of planned behaviour (TPB) and media advertising affect consumer intention. However, media advertisement does not strengthen the relationship between consumer attitude and their intention to purchase. This research, drawing on the established Theory of Planned Behaviour (TPB), explored the interwoven influences of attitudes, social norms, and perceived control on individual intentions, particularly purchasing decisions. It placed special emphasis on the role of attitudes in shaping consumer responses, capturing their overall positive or negative evaluations of the Halal logo's media presence. By delving into these interconnected influences, the study shed light on the complex interplay of factors that ultimately shape consumer behaviour in the context of Halal logo placement. This study stands out for its novelty in examining the influence of Halal logo placement in media on consumer attitudes and purchase intentions. It contributes to the field by incorporating diverse independent variables, guided by the Theory of Planned Behaviour, to elucidate how religious, cultural, and social factors jointly shape consumer behaviour in response to media portrayals of the Halal logo. The research enriches the understanding of consumer behaviour and marketing dynamics specifically related to Halal products and services.

Index Terms:

Halal, Consumer attitudes, Halal Logo placement, Media influence, Purchase intention, SPSS method, Religious, Cultural, Halal Logo Awareness

Influencing Factor of Malaysian Consumer Attitude Toward Halal Online Food Delivery and Their Intention to Use

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Abstract:

Halal online food delivery service (HOFD) is an emerging new wave in the food and beverage industry. This market is continuing to rise and soar after the Covid-19 pandemic. HOFD is essential to Muslims to ensure the Halal integrity of Halal Food. It is important to make sure that the food delivery to consumers is clean, safe, Halal. The purpose of this paper is to examine the key factors that explain intention to use HOFD (perceived ease of use, perceived usefulness, Halal knowledge, Halal awareness, attitude, subjective norms, and perceived behavioural control). The moderating role of Halal certification in the relationship between consumer attitude toward HOFD and intention to use HOFD is also examined. A total of 195 Malaysian Online food delivery users participated in an online survey and hypotheses were tested with SPSS/PLS-SEM. The constructs Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), and Halal Awareness affect intention to use. However, Halal knowledge is found to be insignificant toward attitude. In addition, Halal certificates do not strengthen the relationship between consumer attitudes and intention to use HOFD. The TAM, TPB, Halal knowledge and Halal awareness constructs help explain the use of HOFD services. These results will help the providers of these services to understand Muslim consumer behaviour and to design their marketing strategies more appropriately to ensure consumer favourable attitudes and their intention to use HOFD services.

Index Terms:

Perceived Usefulness, Perceived Ease-of-use, Halal Knowledge, Halal Awareness, Attitude, Subjective Norms, Perceived Behavioural Control, Halal Certification, Intention to Use

Estimation of Blood Glucose Level by using Non-Invasive Monitoring System

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Abstract:

Diabetes is a metabolic pathological condition of concern, which affects the vital organs of the body if not diagnosed and treated on time. Regular monitoring of blood glucose is important to avoid complication of diabetes. Commonly used glucose measurement methods are invasive which generally involves finger puncturing. These methods are painful and frequent pricking cause calluses on the skin and have risk of spreading infectious diseases. Therefore, there is need to develop a non-invasive monitoring system which can measure blood glucose continuously. Initially In vitro glucose measurement prototype is developed using continuous wave from NIR LED to check the sensitivity of the system for different glucose concentrations. Later a Sensor patch was designed using LED and a photodiode to observe diffused reflectance spectra of blood from the human forearm. Diffused reflectance spectra of the subjects obtained with this technique was also compared with commercially available invasive fingertip glucose meter. The results are promising and also shown the potential of using NIR for glucose measurement.

Index Terms:

Diabetes, Metabolic Pathological Condition, Vital Organs, Blood Glucose, NIR LED

Participation of Cadres and Peer Support groups in the PMTCT Program in Karo Regency North Sumatra Province Indonesia

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Abstract:

The prevalence of HIV-infected people in Indonesia currently ranks second in Asia. A total of 70.7 percent of those infected in Indonesia are aged 25–49 years, the reproductive age period. Public awareness to be involved in programs to prevent HIV transmission is urgently needed to accelerate the eradication of HIV AIDS by 2030, especially supporting the fast track: 95–95–95 promoted by UNAID.

This is qualitative research with a phenomenological approach. Data collection with focus group discussions. The research informants were 6 pairs of pregnant women and their husbands, 8 health workers and 15 stakeholders from the community, namely cadres, peer support groups and religious leaders.

The results of this study found that high HIV-related stigma, high workload on health workers, low utilization of services, lack of outreach to the community and lack of coordination between health workers and community stakeholders were obstacles in implementing PMTCT. Making cadres and peer support groups and health workers as outreach workers, educators and ending with an HIV test by health workers at the program entrance is a relevant strategy in an effort to increase the coverage of pregnant women involved in the PMTCT program.

Index Terms:

PMTCT, Cadres, Support Groups, Outreach

A Geospatial Analysis of Motorcycle Accident Risk Factors in Khon Kaen Municipality, Thailand: Examining the Chain of Survival and Potential Strategies

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Abstract:

The study utilizes a geospatial approach to analyze the risk of motorcycle accidents in Khon Kaen Municipality, Thailand. Our focus is on identifying high-crash areas involving motorcyclists and investigating factors that contribute to the severity of accidents and potential survival rates. The analysis is framed within the “Chain of Survival” framework, with a specific focus on how the location of ambulance stations affects emergency medical service response times. Additionally, we explore various traffic management strategies, with an emphasis on their effectiveness in reducing nighttime accidents. The primary goal of this research is to gain a comprehensive understanding of the spatial distribution of motorcycle accidents and to identify key factors influencing their outcomes. Our findings reveal that motorcycle accidents constitute the highest number of traffic accidents in the area, with a significant proportion occurring in the southwest of Khon Kaen Municipality during late night hours. Given the importance of early intervention within the Emergency Medical System, we suggest locating EMS stations close to areas with a high incidence of accidents with respect the effective response time, as recommended at two specific points. However, due to limitations in the number of EMS teams available, these recommended points may experience delays in response times, particularly during late-night hours when traffic accidents peak. Ultimately, the insights gained from this study will inform data-driven recommendations aimed at optimizing both emergency response systems and traffic management strategies to enhance road safety within Khon Kaen Municipality.

Index Terms:

Motorcycle accidents, Geospatial analysis, Chain of Survival, Ambulance response times

MirrorVerse: Navigating Wellness Through IoT-Based Smart Mirror Technology

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Abstract:

In recent years, the integration of technology into fitness has revolutionized the way individuals engage with their health and wellness routines. One such innovation gaining traction is the smart mirror, a dynamic device blending reflective surfaces with interactive technology to offer personalized fitness experiences. This paper delves into the multifaceted realm of smart mirrors, examining their functionality, applications, and implications for promoting physical activity and well-being. By exploring the intersection of smart mirror technology and fitness, this research aims to elucidate the potential benefits, challenges, and future directions of utilizing these innovative devices to optimize health outcomes and enhance user engagement. Through a comprehensive analysis of existing literature, case studies, and technological advancements, this paper provides insights into the evolving landscape of smart mirrors in the realm of fitness and offers recommendations for further research and practical implementation.

Index Terms:

Smart Mirror, Fitness Technology, Health and Wellness, Interactive Displays, User Engagement, Personalized Experiences

The Art of Extracting the Image Features: A Review Paper

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Abstract:

The most crucial thing in computer vision or image processing could be the concept of feature extraction. It involves transforming the raw image data into compact and more meaningful representations of the image. These representations are known as features. The process involves encoding the image information like the content of the image, characteristics of an image or the structure of the image. These features are required for every task we do in computer vision like object detection, image classification, image retrieval, image alignment, image stitching and so on. So, it is a basic need that one can extract the feature in accurate and efficient way but at the same time one has to consider the exactness and relevancy of the feature as per the need of the application. The urge to get more precise and relevant features drives the development of new and modified algorithms and methods for feature extraction. Here is an attempt to collect and study the various methods for feature extraction of an image.

Index Terms:

Computer Vision, Feature Extraction, Image Processing, Image Analysis

Architectural Design Policy Framework within Digital Tools and Techniques for Safe Sustainable Green Tourism Facilities at Post COVID Era

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Abstract:

As the world emerges from the COVID-19 pandemic, there is a growing focus on sustainable and environmentally friendly tourism practices. One key aspect of this is the design of outdoor tourism facilities that prioritize safety and sustainability.

The presented policy framework outlines key considerations for architects and designers when using digital tools and techniques to create safe and sustainable green tourism facilities at outdoors and indoors. Use of digital design tools: Architects should utilize digital tools such as proper digital drawing utilities, Building Information Modeling (BIM) to create detailed, accurate, and efficient designs for outdoor tourism facilities. BIM can help designers plan for safety features such as adequate spacing, ventilation, and sanitation facilities, as well as incorporate sustainable design principles such as water and energy efficiency. Integration of natural elements: The design of outdoor tourism facilities should prioritize the integration of natural elements such as green spaces, natural lighting, landscape upgrade and local materials. This not only enhances the aesthetic appeal of the facility but also promotes a sense of connection with the natural environment, contributing to the overall sustainability of the site. Accessibility and inclusivity: Digital tools can be used to ensure that outdoor, indoor tourism facilities are accessible to all visitors, including those with disabilities.

Designers should consider factors such as ramp access, tactile signage, and accessible restroom facilities to ensure that the facility is welcoming to all guests. Sustainable materials and construction techniques: Architects should prioritize the use of sustainable materials and construction techniques when designing outdoor tourism facilities. This includes using locally sourced materials, incorporating renewable energy sources, and designing structures that are energy-efficient and environmentally friendly. Collaboration with stakeholders: Engineers should work closely with stakeholders such as local communities, environmental organizations, and government agencies to ensure that the design of outdoor tourism facilities aligns with the needs and priorities of the surrounding area. This collaborative approach can help to create sustainable, culturally sensitive, and economically viable tourism facilities. By following the investigated policy framework and incorporating architectural digital tools, digital sanitary drawings and techniques in the design process, engineers can create safe and sustainable green tourism facilities that prioritize the well-being of visitors and the environment in the post-COVID era and in climate change management.

Index Terms:

Architectural Digital Tools, Sustainable Green Tourism, Architectural Digital Techniques, Safe Mobility Facilities For All, Sanitary Digital Drawings, Post COVID-19 Era

Unleashing Potential: The Transformative Influence of Empowerment, Trust, and Procedural Justice on Fostering Employee Development in a New Normal Landscape

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Abstract:

Purpose: The study is aimed at connecting Employee Empowerment, Trust among employees and Procedural Justice with Employee Development for driving work innovation. The study suggests several avenues for additional research, including carrying up additional empirical investigations on the same and other selected antecedents and results of both within various industries.

Design/Methodology/Approach: A theoretical grounded conceptual model is developed to organize a mechanism through Employee empowerment, Trust among employees and Procedural Justice and its relationship with Employee Development fostering work innovation. A questionnaire-based survey was designed to test the model based on dataset of 210 employees in banking industry in Delhi NCR and other parts of north India out of which 176 employees completed the questionnaire completely and correctly. The model and posited hypotheses were tested using SPSS tool.

Findings: The results indicated that Employee empowerment, Trust among employees and Procedural justice positively and significantly affect Employee development.

Limitations and Implications: The study's findings are specific to the context, industry, or organizational culture in which it was conducted. The reliance on self-reported measures for employee empowerment, trust among employee, procedural justice and employee development may introduce response biases. Future studies could incorporate objective performance metrics or supervisor evaluations to complement self-reported data.

Practical implications: The sample represented only banking Industry. The relationship between Employee Empowerment, Trust among Employees, Procedural Justice, and employee development is inspected that would guide managers to induce effective HRD practices in the organizations. The paper offers guidance to practitioners on comprehending and overseeing employee growth.

Originality Values: Ample literature is available on these variables in different context and association but in the best knowledge of authors no study has taken place to integrate all three variables together which have an impact upon employee's development in interactive job of delivering the service in banking industry in last decade.

Index Terms:

Employee Empowerment, Procedural Justice, Trust among Employees, Employee Development, Innovation

Adopting Kotter's Model on ERP Implementation Through IoT & Chatbot WA Report (Case: A Batching Plant in PT APB)

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Abstract:

Enterprise resource planning (ERP) system can improve efficiency and productivity on business by automating some process, however the implementation of it is a difficult and challenging task. PT Adhi Persada Beton (PT APB) is one of the precast and ready-mix suppliers in Indonesia that on processing implements ERP. Implementing ERP on PT APB faced challenges on getting user and operational teams to change the ways of their work. Thus, Kotter's model, 8 steps, adopted to implement ERP on one of batching plant (ready mix) as a pilot project of full implementation ERP from sales module to production-delivery module, along with development of IoT and Chatbot-Whatsapp (WA) report to push the implementation forward. The adoption of Kotter showed the successful of implementation ERP on one plant, with the needs of faster report of production volume and material volume status to Whatsapp group, ERP automatically getting data from sensors (batching plant and truck scale), IoT concept, and sent the report to WA automatically also. Furthermore, the implementation was continued implemented on other plants in PT APB.

Index Terms:

Kotter's Model, ERP Implementation, IoT & Chatbot, Whatsapp

Development of Coconut Meat Chipper

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Abstract:

Coconut chip products is an emerging innovation or delicacy in the Philippines and are liked especially by tourists. Supply of coconut chip products is coming from local producers who are just using an improvised manually-operated equipment in the absence of machines, that will suit their product requirements. This method is tedious, low in capacity, unsafe, and generates a considerable amount of waste. In addition, the increase in demand urges local producers to scale up production and need advanced machinery and equipment to cope. Thus, this study is aimed to develop a mechanized coconut meat chipper. The machine was evaluated in terms of chip thickness, chipping capacity, and efficiency. Results of the study showed that the average thickness achieved was 0.55 mm which met the standard requirement of the local coconut chips producer. The chipping capacity and efficiency were 14 kg/hr and 96 %, respectively. Generally, the machine's overall performance showed a lot of potential and advantage, especially to the local producer of coconut chips in terms of production capacity, labor cost, quality, and safety.

Index Terms:

Coconut Meat Chipper, Coconut Chips, Chipping Capacity, Chipping Efficiency

Augmentation User Friendly Experience within Senior Citizens: Design Thinking Approach to Food Applications

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Abstract:

With the rising population, aging, there is a high demand for such apps that are senior citizens friendly and that can meet the unique challenges of senior citizens. In mobile apps, common issues related to senior citizens are the font size and type, buttons, and color contrast. The study stands on the seniors by designing the food delivery apps using Design Thinking. A mixed qualitative and quantitative design will engage 100 seniors residing in the National Capital Region in interviews and surveys, coupled with direct and indirect app navigation to identify and mitigate the challenges. The knowledge attained will be a base on which app features and interfaces will be improved. A pilot study performed with 10 seniors revealed that all of them have enjoyed the app for its user-friendliness and ease of access. Next is conducting personal interviews with 20 more seniors. The researchers goal of ensuring scientific data analysis will be accomplished with the use of SPSS statistical tool, which enables the researchers to put the user experience feedback to a qualitative test. The SPSS-generated results will be important in improving the design of the application so that it will be tailored to the needs of senior consumers.

Index Terms:

Senior Citizens, Food Applications, Food Delivery Apps

Redesigning Classroom Locker–Chair Hybrids: An Innovative Design Thinking Approach Adopting Origami–Based Engineering Design

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Abstract:

The existing problematic state of the country's public classroom armchairs results in the overall prevalence of musculoskeletal disorders among high school students. Secondary students have higher exposure to risk factors of musculoskeletal disorders or MSDs due to the use of school chairs that lack ergonomic parameters and storage functionality. The main beneficiaries of this study would be Grade 10 students, as it aims to effectively address their musculoskeletal issues and promote ergonomic practices in their sitting posture at school. The researchers also collected data from secondary schools in Quezon City through surveys, interviews, observations, and physical measurements. The constructed locker–chair hybrid classroom furniture was developed using the Design Thinking Approach, which is a five–stage process: Empathize, Define, Ideate, Prototype, and Test. In addition, researchers have conducted ergonomic analyses using z–test to assess the ideal chair dimensions to be used for the developed low–fidelity prototype based on the Analytical Hierarchy Process (AHP) that aided in the selection of the optimal origami engineering design. The proponents have conducted user–acceptance testing (UAT) to determine the compatibility of the low–fidelity prototype of the locker–chair to address the identified pain points and user preferences. Ultimately, out of the 12 features tested in the user–acceptance test, five (5) dimensions were rejected by the users, namely, Materials, Long–term Durability, Capacity, Security, and Aesthetics.

Index Terms:

Classroom Locker–Chair Hybrids, Origami–Based Engineering Design, Musculoskeletal Disorders (MSD)

Developing Service Recovery Strategies Through Students' Commuting Experience Using Servqual

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Abstract:

This study explores challenges faced by Filipino student commuters on MRT and LRT in NCR, suggesting solutions to improve daily journeys amid issues such as overcrowding, technical glitches, and fare structures. By emphasizing the importance of MRT and LRT for many people, the research aims to enhance public transportation experiences. This study offers a comprehensive analysis using the SERVQUAL framework, the study analyzes commuter satisfaction, dissatisfaction, and perceptions. The beneficiaries of this study encompass a broad spectrum, including student commuters, transportation authorities, planners, operators, and the academic community. The study proposed service recovery strategies from the main survey grouped into process, customer, and employee recovery. Process strategies include implementing advanced inspection technology, utilizing cutting-edge operational systems, and establishing emergency response plans. Customer-focused strategies emphasize enforcing proper queuing, maintaining safety guidelines, training staff in crowd management, and ensuring immediate staff responsiveness. Employee strategies aim to enhance bag inspection processes, implement stricter baggage checks, provide training programs for guards, maintain signage, conduct regular performance assessments, implement faster shift rotations, and reinforce safety measures through visual reminders. These strategies aim to improve the overall quality of commuting experiences, fostering a more efficient and satisfactory public transportation system in the Philippines.

Index Terms:

Filipino student, Commuters, SERVQUAL framework

Protection of Plant Varieties and Farmer's Rights: An Indian Perspective

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Abstract:

Plant variety protection is linked to agricultural advancement and advances as well as biological resources conservation. The most popular method, referred to as the breeder's right, is the acquisition of intellectual property protection via plant variety protection. The international Union for the protection of new varieties of Plants (UPOV) devised a system that is largely in use. In order for a plant variety to consistency, and distinctness. The creation and modification of new or improved plant varieties would be the most crucial and important of these factors, despite the fact that the current international framework for the sui generis protection of plant varieties promotes a specific agricultural arrangement and management. In reality, even with the help of new technologies, modeling new plant kinds takes a lot of time and financial and human resources. In terms of finances, facilities, genetic resources and the expertise & experience of the breeders, breeding new varieties is a resource-intensive endeavor. It can also take a long time; a new variety can take up to ten years to release, but it usually takes six to seven years. The purpose of this essay is to evaluate the benefits and drawbacks of the 2001 Farmers Right Act and Protection of Plant Varieties.

Index Terms:

Protection of Plant Varieties, Farmer's Rights, India, 2001 Farmers Right Act, Protection of Plant Varieties

Crop Recommendation System Based on Soil Nutrients and Environmental Conditions

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Abstract:

Agriculture plays a decisive role in India as it is the main reason for the nation's economy and sustains the livelihood of a significant portion of the population. With over half of India's workforce engaged in agriculture, it contributes substantially to the country's Gross Domestic Product and remains a key driver of economic growth. Furthermore, agriculture plays an evident role in ensuring food security for India's vast and growing population, reducing dependency on food imports. It even plays a dominant role in employment in rural areas, alleviating poverty and promoting inclusive growth. In India's agriculture context, data collection and preprocessing are pivotal for informed decision-making and the optimization of farming practices. Data collection involves gathering information on diverse aspects such as soil quality, climate conditions, and crop types. Soil data is acquired through extensive sampling and laboratory analysis to assess factors like pH values, and nutrient content, crucial for soil fertility and crop selection. Climate and weather data provide insights into local climate patterns, enabling farmers to plan planting and harvesting activities accordingly. Standardization and normalization are employed to make data uniform and compatible for analysis, while feature engineering creates new variables to enhance the accuracy of crop recommendations. Data integration merges information from different sources into a cohesive dataset.

Index Terms:

Recommendation System, Prediction, Agriculture, Machine Learning, Ensemble Techniques, Multi-Layer Perceptron, Artificial Neural Network

IoT-based Barangay Waste Monitoring and Collection System for Candon City

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Abstract:

Then advancement of Internet of Things (IoT) is fast emerging and providing solutions to specific problems and situation faced by people. The trend of transitioning to a "Smart City" is one of its well-known is its biggest implementation in making lives better. Implementing a Waste Monitoring and Collection System is one of the major concerns in most cities and the effectiveness of its management becomes a relevant part of a smart city. This paper aims at on giving an IoT based system solution to address the problems that are currently encountered by the present solid waste management system of Candon City. By providing an IoT based system that includes tracking, collecting and managing the solid waste can be easily advanced and monitored efficiently. By making use of sensors, we gather data from the bins itself and send them to an online platform using Arduino Cloud technology. Data gathered from different Barangays of the City are collected and sent to the cloud over the internet which has the capability of making alerts such as push notification and emails on the City Waste Management employees. The main advantage of the proposed system is the use of Arduino Cloud for data transfer and storage which applies online data collection and storage.

Index Terms:

Barangay Waste Monitoring, Candon City, Smart City

Forest Fire Prediction and Mitigation using Machine Learning and OpenCV

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Abstract:

Forest fires are a major threat to ecosystems, wildlife, and human lives. This research proposes a comprehensive system for predicting, assessing, and mitigating forest fires using machine learning and OpenCV technologies. The system combines two prediction models that focus on fire occurrence and burned area estimation, which are supplemented by an OpenCV-based real-time fire detection system. Forest fires represent significant risks to the environment, wildlife, and communities, needing excellent detection and forecast approaches to lessen their impact[1]. This study emphasizes the importance of forest fire detection and forecasting in limiting the spread of fires and minimizing devastation. This study tries to anticipate the likelihood of forest fire outbreaks and their subsequent impact on burned regions by examining several elements such as rainfall patterns, leaf humidity, and historical fire data while employing camera-based fire monitoring equipment. This innovative system holds great promise for improving forest fire management by offering the real-time detection system provides immediate alerts, allowing for swift intervention. The machine learning models estimate the likelihood and extent of fires, enabling better resource allocation. Insights from historical data and environmental factors can inform preventive measures and risk assessments. By combining cutting-edge technology with a data-driven approach, this research paves the way for a more effective and proactive approach to forest fire management, safeguarding ecosystems, wildlife, and communities. We used linear regression approaches to train the model[5]. Among these methods are LASSO regression, Ridge regression, K-Neighbors regression, Support Vector Regressor, and Random Forest Regressor. The research underscores the crucial role of accurate fire detection and forecasting in minimizing the devastating impact of wildfires. By analyzing factors like rainfall patterns, leaf humidity, and historical fire data, alongside camera-based monitoring, the system aims to anticipate fire outbreaks and assess their potential spread. The researchers employed various machine learning techniques, with Random Forest Regressor emerging as the most effective model for predicting burned areas.

Index Terms:

OpenCV, Fire Detection, Prediction Models, Random Forest, Mitigation Strategies

Different Machine Learning Techniques for Detection of Fake News

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Abstract:

Fake news is a major concern on social media and other platforms since it may cause great harm to the nation and society and is widely disseminated. Numerous recent studies have already focused on how to identify it. This study examines the literature on the fake news detection and it evaluates conventional machine learning models to find best one, with the objective of developing product model by a supervised machine learning algorithm which can identify news with fake as true or false. It accomplishes this by using textual analysis techniques like Natural Language Processing and Python Scikit-Learn. The outcomes demonstrate that the Random Forest Classifier detects bogus news with a high degree of accuracy and F1-score.

Index Terms:

Fake News Detection, Machine Learning, Natural Language Processing, Classification Techniques

Intercultural Leadership and Social Exchange in Hybrid Workplace Contexts: A Theory Extension

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Abstract:

This study explored the integration of intercultural leadership and social exchange theories within a hybrid higher education workplace in terms of a) opportunities, b) challenges, and c) organizational dynamics and proposed an improved theory. It included eight higher education leaders and seventeen of their immediate subordinates in a selected private university under the hybrid work setup. Analysis of qualitative data focused on the dyadic interaction as a consequence of two people's communication motivation and skills as proposed by Spitzberg and the interpersonal relationships that involve two parties trading for each other's needs, wherein to receive rewards, parties must swap greater rewards, as proposed by Redmond. The Straussian grounded theory was used to see the integration of intercultural leadership and social exchange theories and extend these theories in the context of a hybrid workplace. The extension of the said theories was developed using grounded theory, where participants were immersed in a hybrid workplace, using methods that more accurately represented the real world.

Intercultural communication and social exchange are two critical elements in a hybrid workplace, where employees work both remotely and on-site. Intercultural communication refers to the process of communicating and exchanging information between individuals from different cultural backgrounds. It involves understanding cultural differences, values, and norms, and using appropriate communication methods to bridge the cultural gap. In a hybrid workplace, employees come from different cultures, speak different languages, and have different socio-economic backgrounds. The output of the study was the Hybrid Intercultural Social Exchange (H.I.S.E.) Theory Model.

Index Terms:

Intercultural Communication, Intercultural Leadership, Hybrid Workplace, Social Exchange, Culture, Social Science, Theory Extension

Enhanced Precision Volcano Weather Forecasting: Leveraging Ensemble Learning and Neural Networks in Cloud Computing for Geospatial and Atmospheric Data Analysis

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Abstract:

Forecasting volcano-related weather encompasses the anticipation of ash clouds, gas releases, and potential pyroclastic movements, contributing to plans to minimize risks and protect communities residing close to active volcanic areas. Incorporating varied data origins and algorithms for precise real-time forecasts proves challenging in volcano weather prediction through cloud computing, while guaranteeing the scalability and dependability of cloud systems handling extensive geospatial and atmospheric data poses a significant hurdle. The challenge resides in the intricacy of precisely forecasting volcanic weather occurrences, requiring the integration of various data sources and algorithms within cloud systems that must be scalable and dependable to analyze extensive geospatial and atmospheric data accurately, crucial for providing precise, real-time forecasts to protect communities near active volcanoes. The proposed model harnesses ensemble learning methods coupled with neural networks to bypass the challenges of integrating diverse data sources and ensuring cloud system scalability and reliability, enhancing the precision of real-time volcano weather forecasts by statistically analyzing geospatial and atmospheric data. The suggested system surpasses the current one in accuracy, precision, and time efficiency by utilizing ensemble learning techniques and neural networks, resulting in improved predictive accuracy, finer real-time forecasts, and reduced computational burden when managing vast geospatial and atmospheric data.

Index Terms:

Volcano weather forecasting, Ensemble learning, Neural networks, Cloud computing, Geospatial data analysis, Atmospheric data analysis, Real-time forecasts, Risk mitigation



Revealing Engaging Content Marketing for MSMEs through TikTok as a Social Commerce Platform

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Abstract:

The rise of TikTok has presented opportunities and challenges for micro, small, and medium enterprises (MSMEs) seeking to market their products. Many MSMEs have embraced entertainment content like drama, shocking information, comedy, and parody to boost visibility. At the same time, some TikTok business owners reveal that there is effectiveness in gaining and engaging audiences organically through this approach which can increase product visibility. Instead, content that favorably educates and offers solutions to consumer problems is more likely to capture less attention, decrease visibility, and not drive conversion rates. This research aims to find entertainment-focused content often viral by engaging and entertaining short-form videos in the TikTok algorithm, increasing its chances of product visibility. Additionally, value-driven content that addresses consumer needs, such as educational or problem-solving content, tends to be less shared and engaged, degrading MSME product visibility. These findings hold significant implications for MSMEs leveraging digital content on TikTok. MSMEs can effectively raise product awareness and conversion likelihood by prioritizing entertaining, humorous, and shocking content. This approach is crucial for small businesses aiming to expand their customer base and boost sales. Whereas educational content may be useful and informative, it may not increase MSME product visibility optimally. By focusing on entertaining-driven content that resonates with consumers, MSMEs can create digital material more likely to be seen, shared, and engaged with, ultimately driving awareness and conversions.

Index Terms:

Entertainment content, MSMEs (Micro, Small, and Medium Enterprises), Product visibility, TikTok marketing

Unravelling Parkinson's Disease: Leveraging The Power of AI

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Abstract:

Artificial intelligence (AI) is a field of computer science that focuses on developing intelligent machines capable of performing tasks that typically require human intelligence. AI encompasses various techniques such as machine learning, natural language processing, and computer vision, enabling systems to learn, reason, and make decisions based on data. Parkinson's disease (PD) is a neurodegenerative disorder that affects the central nervous system. It is characterized by the progressive loss of dopamine-producing cells in a specific region of the brain called the substantia nigra. Dopamine is a neurotransmitter responsible for facilitating smooth, coordinated movements. The exact cause of Parkinson's disease is not fully understood, but a combination of genetic and environmental factors is believed to contribute to its development. The disease primarily affects older adults, typically around 60 or older, although cases of early-onset Parkinson's can occur. Methodology in identifying the optimal brain regions to target with patient-specific characteristics. By analyzing neuroimaging data and utilizing machine learning algorithms.

Index Terms:

Artificial Intelligence, TMS, CNN

Real-Time DDoS Attack Prediction in SDN Environments using Machine Learning

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Abstract:

The ever-growing reliance on SDN-based services necessitates robust security measures against Distributed Denial-of-Service (DDoS) attacks that threaten service availability. This project investigates the development of a real-time prediction system for DDoS attacks in SDN environments, leveraging the power of machine learning. The proposed system employs a Decision Tree classification algorithm implemented in Python. To ensure accurate attack identification, the system meticulously addresses data preprocessing challenges inherent in network traffic datasets. These challenges include imbalanced class distributions, where normal traffic significantly outnumbers attack instances, and the presence of categorical features requiring transformation for machine learning algorithms. The system tackles these issues by employing techniques like oversampling to balance the class distribution and label encoding for categorical features. By effectively addressing these preprocessing hurdles, the model is empowered to analyze network traffic data and predict DDoS attacks with high accuracy. This real-time prediction capability can significantly enhance SDN security by enabling proactive mitigation strategies to safeguard service availability and prevent disruptions caused by DDoS attacks.

Index Terms:

Keyword, Subcategory, DDoS attack prediction, Machine Learning, SDN security, Network Security, Decision Tree, Classification Algorithm, Real-time prediction, Threat detection, Network traffic analysis, Data preprocessing, Imbalanced data, Oversampling, Categorical features, Label encoding, Python, Machine Learning Framework

Table Tennis Smash Target Tool Model (Jr Smash Target)

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Abstract:

One of the technologies used in table tennis is smash target sensor technology. In reality, the price of this smash target sensor can be said little bit expensive. The purpose of this research was to: (1) develop a product design (JR Smash Target-2023) for drill training for smash hitting techniques, (2) produce a product (JR Smash Target-2023) that is effective and affordable. This research used Research and development method, the results showed the quality of the product (JR Smash Target-2023) based on the evaluation results of Material Expert I is "Very good" with a score of 83. The evaluation of Material Expert II (Coach) is "Excellent" with a score of 85. Electronics Expert Evaluation is "Excellent" with a score of 89. In conclusion: (1) the product model (JR Smash Target-2023) can be used as a tool for drilling smash punch techniques, (2) effective as a tool for drilling smash punch techniques. It is recommended that (JR Smash Target-2023) can be used for all athletes/players because the price is affordable.

Index Terms:

JR Smash Target, Table Tennis Smash

Evaluating the Adequacy of Public Open Space for the Residents of Subdivisions in Cabanatuan City Central Business District

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Abstract:

Public Open Spaces (POS) and Urban Green Spaces (UGS) are vital elements of the urban milieu, providing recreational opportunities and enhancing residents' quality of life. However, in some localities in the Philippines such as the City of Cabanatuan particularly in its inner-city was considered as the urban congested core that caused the city to lack POS and UGS. A mixed methods approach was considered for data collection, including the study of the utilization pattern of residents, and measuring the actual space allocated for POS of each subdivision. According to the results, Cabanatuan City has only 3.6 square meters of POS per person, indicating a shortfall comparable to Manila's score in GCI. With a growing population and demand for open space, Cabanatuan City would need to provide at least 114.7 hectares of land designated for POS to achieve a good and healthy environment for its residents.

Index Terms:

Central Business District (CBD); Green City Index (GCI); Public Open Space (POS); Urban Green Space (UGS)

Seasonal Fluctuations in the Concentration of Natural Radionuclides in Groundwater within Al Dhahirah Governorate, Sultanate of Oman

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Abstract:

This study, conducted in Oman's Al Dhahirah Governorate, assessed radionuclide concentrations and associated radiological hazards in groundwater, which is vital for irrigation and human consumption in an area facing groundwater depletion and water quality issues. The research covered 11 sample sites, comprising eight wells and three Aflaj. Monthly collected groundwater samples in a year were investigated for the impact of seasonal variations using a hyper-pure germanium detector (HPGe) with a 60% efficiency. The results showed varying levels of radionuclides, with significant increases during the monsoon season due to leaching and geological interactions, while during drier periods, radionuclide concentrations were lower, indicating the impact of seasonal weather changes. An annual assessment of U-238, Th-232, and K-40 levels revealed that they were below the World Health Organization's (WHO) recommended limits for drinking water. The study also calculated the annual effective dose (ED), which was well below the WHO's safety limit of 100 μ Sv/yr for radionuclides in drinking water. Overall, the research established that consuming groundwater from the studied area doesn't pose significant health risks from radiation exposure. These findings hold importance for water resource management and public health in Oman.

Index Terms:

Activity concentration, Annual effective dose, Groundwater, HPGe, Radiological hazards

Assessment of Harmonic Currents in a Low Voltage Network with the Presence of Electric Vehicles and a Peak Shaving Program

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Abstract:

This paper presents an assessment of the main parameters associated with current harmonics caused by the inclusion of electric vehicles (EVs) charging stations in a low voltage test network. For this work, the standard IEEE 519 (similar to Colombian technical standard NTC-5001) is taken as the reference to check and compare the maximum harmonic reference levels when considering different EVs penetration levels, as well as a demand-side management (DSM) program considered to reduce peak shaving in the test network. During the study, three types of charging stations with different harmonic pollution profiles were considered. The DSM program was developed in Matlab® while the electrical behavior of the network, including EVs, was analyzed using simulations in Digsilent®. The results show that the implementation of the DSM program prevents exceeding the technical limits of the network and it helps to decrease harmonic pollution, mitigating the possible effects that could be spread in the network.

Index Terms:

Electric Vehicles (EVs), Demand-Side Management (DSM), Matlab®, Digsilent®

The Clash between Good and Evil in Harry Potter Series

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Abstract:

Good versus evil is not a novel notion in a theoretical sense. Its origin can be traced back to the age of humanity. Determining the precise definition of good and evil proves to be an exceedingly challenging task due to the prevalence of diverse cultural perspectives on these concepts. Determining the precise nature of good and evil is therefore impossible. My objective is to identify the most appropriate manifestations of good and evil in the Harry Potter series.

Index Terms:

Determining, Evil, Good, and Objection

Effectiveness of Virtual Reality–Based Forehand Smash Training Model for Table Tennis Athletes Performance

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Abstract:

The aim of this research is to analyze the effectiveness of the forehand smash training model in table tennis using virtual reality (VR) technology, especially for athletes aged 13–17 years. This model consists of four components aimed at increasing motivation: concentration, hand movement technique, waist rotation, and standing position. Performance in VR–based forehand smash training was assessed using mixed model analysis of variance. This analysis involved between–subject factors (VR training group and control group) and within–subject factors (pre– and post–training). This study involved 60 participants, who were divided into a VR training group (n = 30) and a control group without training (n = 30). During VR training sessions, participants engage in competitive table tennis matches against artificial intelligence–based players. An expert table tennis coach evaluates the participant’s performance in real table tennis before and after the training phase. Expert coaches assess participants’ forehand smashes in terms of quantitative aspects (number of rallies without errors) and quality aspects of skills (technique and consistency). The results of the research prove that the application of the VR–based forehand smash training model significantly improved the performance of table tennis athletes compared to the control group without VR–based forehand smash training, both in terms of quantitative assessment ($p < 0.001$, Cohen’s $d = 1.08$) and assessment of skill quality ($p < 0.001$, Cohen’s $d = 1.10$). It was concluded that the implementation of a VR–based smash forehand training model significantly improved the performance of table tennis athletes.

Index Terms:

Skills, Table Tennis, Virtual Reality, Physical Education

What do Audiences Say? Communicating Science, Technology, and Innovation in Multimediascape

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Abstract:

Communicating science, technology and innovation through multimediascape enabled a better grasp of the public on Department of Science and Technology of the Philippine government, through its Small Enterprise Technology Upgrading Program (SETUP), DOST's d Technology (CEST), S&T Special Programs and Projects and S&T Support Services [Regional Standards and Testing Laboratory (RSTL), Regional Metrology Laboratory (RML), Scholarships, among other programs. This project, which was borne out of the regional "Baseline Survey for Public Awareness and Understanding of Science, Technology and Innovation in Bicol Region, Philippines" is in partnership with Bicol University, as an institution with primary mandate of providing progressive leadership in research, extension services and policy development. Science can do many valuable things for individuals, communities, and nations. It can help individuals, organizations, and institutions understand consequences of current or potential actions. It can give public service providers knowledge that they can use to improve quality of life. Communicating science and technology has become a priority of many research and policy institutions, a concern of many other private and public bodies, and an established subject of training and education. Communicating science, technology and innovation in multimedia platforms is a holistic and effective strategy to reach out to its publics.

Index Terms:

Communication, Science, Technology, Innovation Multimedia Scope

The Impact of Child Labor in the Peace and Order Situation in the City of Manila: An Assessment

Joan P. Cinco

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Abstract:

Child labor is becoming prevalent in the world, particularly in the Philippines. It was caused by social, economic, and political factors that leads to a child to work at an early age. This study assessed the extent causes of social, economic and political factors in child labor, the impact of child labor in the peace and order situation in terms of pornography or white slavery or prostitution, illegal drugs and criminal gang or syndicate, the significant differences in the respondent's assessment, and the proposed measures to address the problem of child labor in the City of Manila in regards to social, economic and political. This study utilized descriptive research using non-probability sampling, and data were analyzed using frequency & percentage, average weighted mean, and F-test ANOVA. The result alludes that the extent cause of child labor in terms of social, economic and political was a great extent and extent in the view of the three groups of respondents while the impact of child labor in peace and order was seen as a very high impact. There is no significant difference in the assessment of the three groups of respondents. It qualifies that the respondents have the same level of assessment relative to all the indicators. In response to the critical issue of child labor in Manila, this study has led to the formulation of the "Manila Child Labor Prevention and Control Initiative." By engaging perspectives from PNP personnel, DSWD personnel, and Barangay Officials, the program is designed to raise awareness within the community, reinforce law enforcement capabilities, provide social support to vulnerable families, and engage local communities in preventing child labor.

Index Terms:

Child Labor, Extent Causes, Social, Economic, Political and Impact

The Dynamic Leadership Skills of Administrators from Non-Sectarian Basic Education Schools: Basis for the Proposed Leadership Development Plan

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Abstract:

Although there have been researches conducted on leadership of educators as well as the leadership programs made for them, leadership skills gap is still an issue. This mixed methods research aims to fill in this gap by proposing a leadership development plan based on the assessed dynamic leadership skills of administrators (principals or coordinators) from ten (10) non-sectarian basic education schools in South Caloocan as well as on the dynamic leadership challenges they encountered in their organizations. Findings revealed that principals or coordinators have high levels of dynamic leadership skills. However, findings also revealed that these administrators still encountered dynamic leadership challenges including diversities, insufficiencies, and negative behaviors/ conditions in their organizations. From these findings, it was concluded that the proposed leadership development plan is necessary for these administrators since it will not just help address their leadership skills gap and align their leadership with their organizational goals but, more importantly, it will also address the identified dynamic leadership challenges and will further develop or strengthen their dynamic leadership skills. Future directions and implications of dynamic leadership in basic education were also discussed.

Index Terms:

Dynamic Leadership Skills, Leadership, Leadership Development Plan, Mixed Methods Research, Non-sectarian Basic Education Schools, School Administrators, South Caloocan

Consequences of Legal and Ethical Leadership in the Private Higher Education

Lesia e. Diaz

Doctor of Education–Major in Leadership

Abstract:

This study determined consequences of ethical and legal leadership in Administration.

In this study, the researcher explored and defined the consequences of ethical and legal leadership by assessing the responses from the school leaders. Elite individuals in the said schools were selected for interviews on the basis of their experiences in areas relevant to this research.

The researcher used phenomenological approach to describe and capture complex discursive activities that produced meaning through interviews. The researcher took into account the complexity of this study on ethical and legal leadership. Likewise, the extent of the use of the data gathered in this research work.

All interviews used a series of guided questions. They were conducted telephonically, electronically recorded and results were professionally transcribed to ensure accuracy. The interviews were evaluated for content analysis using qualitative analysis to identify salient elements relating to importance and unobtrusive theme. Data from transcribed interviews were coded to reduce attritions to the component elements of cause, outcome and links between cause and outcome. The intent was to analyze the data and establish common themes, patterns, terms or ideas that can inform a deeper understanding of the issue surrounding research problem while articulating a rich description on the phenomenon of ethical and legal leadership.

The researcher found out that professional ethics is very much evident where respect is established and leaders have a guiding vision for the success of the institution. Ethical behavior among school leaders were practiced in dealing with their co-workers. The qualities of integrity and responsibility were fostered among school administrators. Proper management of organization were controlled and established in maintaining discipline following rules, policies and procedures to bring out healthy climate that exercises professionalism, proper judgment and fairness among employees are evident.

To address the loopholes, it was noted that leaders need to model leadership within their remits and so it goes on as then cascade it throughout the organization. Their decision gave impact on the behavior of the faculty towards work. Demonstrated balanced leadership of ethical and legal could touch the heart of teachers to do their best for it gave a strong motivation to them.

As mentioned, consequences can be encountered by leaders in carrying such responsibilities, however, problems and sentiments about modeling, assessment and evaluation of performance have been resolved through the use of strategic management where respect and professionalism were possessed and practiced by all the respondents in the community. They considered three domains like people, politics and problems to resolve whatever consequences that may take part in running the organization applying moral/ethical and legal leadership.

Index Terms:

Legal and Ethical Leadership, Private Higher Education

An Assessment of the Therapeutic Community (TC) Program for Persons Deprived of Liberty (PDL) in Manila City Jails

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Abstract:

The Therapeutic Community (TC) program for People Deprived of Liberty (PDL) in the Manila City Jails is evaluated in this study for its efficacy. The study intends to address the issue of jail overcrowding and how it affects the inmates' access to care, safety, and health. The study uses a mixed-method research approach, integrating qualitative and quantitative techniques, to assess how well the TC program reduces reoffending rates and makes program improvement suggestions. The results underline the need for improved facility administration, better rehabilitation and reentry services, and better sentencing procedures. The study also highlights the lack of statistics on recidivism in the Philippines and the necessity of precise data to support evidence-based policies. The study's findings highlight how well the TC program works to help PDLs develop their own personal growth, change their behavior, and improve their skills. By putting more emphasis on addressing participants' spiritual needs, the program can, however, increase its efficacy. The study comes to the conclusion that the TC program can successfully prevent reoffending and enable successful reintegration into society, thanks to its emphasis on behavioral, psychological, spiritual, and skill-development components.

Index Terms:

Therapeutic Community (TC) Program, Persons Deprived of Liberty (PDL), Jail Overcrowding, Reoffending, Program Implementation

Validation and Evaluation of the Proposed Module in Vice and Drug Education Control: Basis for Course Enhancement

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Abstract:

The fundamental knowledge that students will encounter, discover, and use during a course is provided by the instructional materials. They could motivate or disengage students. The main purpose of the study is to evaluate and validate the proposed module in Vice and Drug Education Control. The study used a quantitative descriptive method. It involves collecting and analyzing numerical data. It is ideal for identifying trends and averages, making predictions, testing relationships, and generalizing results for large populations. There are four hundred twenty-two (422) individuals from three groups of respondents using the simple random sample scheme. The study utilized a self-structured survey questionnaire. For the statistical treatment, the researcher used percentage, average weighted mean and analysis of variance (anova). The results shows that the The Criminology Students, Criminology Faculty and Administrators assessment in the Validation and Evaluation of the Proposed Module in Vice and Drug Education Control Strongly Agree in terms of Module Title, Learning Outcomes, Content, Learning Strategies and Activities, Evaluation and References. Based on the results of the study, the researcher enhanced a well developed Module in Vice and Drug Education Control.

Index Terms:

Validation, Evaluation, Proposed Module, Learning Strategies and Activities, Learning Outcomes

Protective Measures for Victims of Violence against Women and Children in Taytay, Rizal towards Strengthened Safeguard Mechanism

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Abstract:

Women and children today are most likely to be abused, violated, and discriminated against. Violence against women and children persists in every country in the world as a pervasive violation of human rights and a major impediment to achieving gender equality. It is very alarming that in every corner of the world, women and children were abused. Among the biggest victims of VAWC cases are impoverished families where poverty, illiteracy, and financial dependence on men which tendencies of crime happened. Our country has passed some of the toughest laws to protect women from violence, harassment, and discrimination against abusive people. Hence, this study assessed the Protective Measures for victims of violence against women and children in Taytay, Rizal towards strengthened safeguard mechanism. The researcher made use of descriptive research. There were two groups of respondents; first group was composed of fifty (50) respondents (including PNP officers, DSWD personnel, NGOs and Barangay Officials of selected barangay) while the second group was composed also of fifty (50) respondents (victim-survivors and family members). A survey questionnaire was provided to the respondents and interviews with a checklist to confirm important information and focus group discussion were also done. The findings of the study on the four variables such as physical violence, psychological violence, sexual violence and economic violence were assessed with high level of satisfaction from the two groups of respondents. After assessing the different variables, it was found out that there is a significant difference in the assessment of the two groups of respondents.

Index Terms:

Victim, Violence, Women, Children, VAWC

The Effectiveness of Digital Education in Raising Awareness on Cybercrime among Selected Information System Students in San Jose Del Monte Bulacan

Jeric Rivas

Philippine College of Criminology, College of Criminal Justice, Philippines

Abstract:

In an Era dominated by technological advancements, the threat of cybercrime has become increasingly pervasive, necessitating a proactive approach to cyber security education in enhancing awareness of cybercrime among selected Information system students at San Jose Del Monte Bulacan. Employing a descriptive quantitative research design, the study utilized purposive sampling to select fifty participants. A self-made questionnaire provided the researchers with control over data collection, ensuring relevance to the study.

Statistical tools including Frequency and percentage distribution Method, Weighted mean, and Chi-Square, were employed to analyze the collected data. The Findings reveal that the majority of respondents are young males, with Facebook as the predominant digital medium. The effectiveness of digital education was evaluated based on the respondents' perceptions in terms of remembering, understanding, applying, and analyzing cybercrime-related content.

Results revealed overall weighted means that were verbally interpreted as moderately agreed across all dimensions, indicating a positive response to the effectiveness of digital education. Notably, the study finds that the respondents have a significant level of awareness particularly in areas such as phishing, identity theft, online solicitation and hacking.

This research explores how digital Learning serves as a dynamic tool, not only imparting knowledge about cyber threats but also equipping students with practical skills to address them. The Research highlights the simplicity and excellence of digital education in empowering students to navigate the complexities of cyber security. Ultimately, the study emphasizes how important digital education is for making people aware of and resilient against the constantly changing threats in our connected online world.

Index Terms:

Digital Education, Awareness, Cybercrime, Information System, Cyber Security

Integration of AI Tools in Language Pedagogy at the Philippine College of Criminology: Basis for the Development of an Enhanced Language Program

Arian Grace G. Beria

General Education Department, College of Criminal Justice, Philippine College of Criminology, Manila, Philippines

Abstract:

There are a lot of studies conducted about the importance of AI, but only few focused on its application in the pedagogy of English Language. This descriptive research aims to fill in this gap by proposing an enhanced language program based on the assessment on the integration of AI tools in language teaching and learning in the General Education Department – College of Criminal Justice at the Philippine College of Criminology. The assessment involved twelve (14) out of eighteen (20) faculty members from the languages area during 1st semester of Academic Year 2023–2024. The study revealed that most of the respondents use the AI tools in teaching and learning the English language. The findings of the research highlight the critical necessity for users to exercise caution when utilizing AI tools. Additionally, it suggests that various authorities within the educational and administrative spheres, such as the Commission on Higher Education, Executive Officials, and Boards of Trustees of institutions like the Philippine College of Criminology, along with College Deans, Program Heads, and Subject Area Coordinators in the College of Criminal Justice, should enforce ethical guidelines regarding the use of AI tools among faculty members. The study prompts a discussion on the ramifications of its results and outlines essential steps for stakeholders to take. Furthermore, it welcomes significant recommendations for further improving the study. Helpful, but must be considered to be used in an ethical manner.

Index Terms:

AI Tools, Enhanced Language Program, Language Pedagogy, Philippine College of Criminology, Quantitative Research

Revisiting The After-Care Support Services for Children in Conflict with the Law in the Philippines

Gaypelyn M. Casiw

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Abstract:

One of the goals of the criminal justice system is to rehabilitate children in conflict with the law (CICL) and assist in their reintegration to society free from trauma and stigma. While various rehabilitation programs are available for CICL, tailored to their individual needs and timeframe, the efficacy of these programs is ultimately determined by the post-completion outcomes. Thus, there is a recognized necessity for an after-care support system, aimed at diminishing the likelihood of recidivism and fostering successful community reintegration for CICL. Using the descriptive method with survey questionnaire as the means of data collection from four groups of respondents, this study assessed the implementation of the after-care support services for children in conflict with the law of the Department of Social Welfare and Development- National Capital Region and identified the problems encountered in its implementation. Based on the study's findings, recommendations have been formulated, including proposals for post-release programs tailored to the needs of CICL, the establishment of a specialized working unit dedicated to overseeing such programs, as well as the development of comprehensive guidelines and procedures for the delivery of after-care support services or post-release programs for CICL. These recommendations are intended to inform and guide the Department of Social Welfare and Development (DSWD) in enhancing its support services for CICL, thereby contributing to their successful rehabilitation and reintegration into society.

Index Terms:

After-Care Support, Children, Law, Philippines, Conflict With The Law (CICL), Department of Social Welfare and Development (DSWD)

Impact of the Intervention Program to the Life of the Children in Conflict with the Law

Noeliza B. Baguidudol–Ayak

Instructor, Don Mariano Marcos Memorial State University, Bacnotan, Philippines

Abstract:

Youth nowadays, regardless of gender, social origin or country of residence, are subject to individual risks. Young people who are at risk of becoming delinquent often live in difficult circumstances. Children who for various reasons including parental alcoholism, poverty, breakdown of the family, abusive conditions in their home are at greatest risk of falling into juvenile delinquency. The study focused on the determination of the conditions or situations of the child in conflict with the law in the Regional Rehabilitation Center for Youth. The study covers the impact of intervention programs to CICL's and the barriers and motivators faced while undergoing intervention programs. It was found out that the intervention program made an impact on psychological aspect, social aspect, physical aspect, academic aspect and vocational aspect of the CILC; the barriers of the intervention programs includes hopelessness, fear of revenge, and the different traditions of the CILC; and the motivators includes their family, police, and community. In conclusion, the intervention program provides a huge impact to the lives of the CILC. Thus, Regional Rehabilitation Center for Youth should continue encouraging the CILC to avoid future violations.

Index Terms:

CICL, Intervention Programs, Juvenile Delinquency

Effects of Sodium Chloride Plus Mango Polyphenol Extract Natural Treatment on the Mechanical Properties of Selected Philippine Bamboo Species

Cesario A. Bacosa Jr

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Michael E. Loretero

University of San Carlos, Philippines

Evelyn B. Taboada

University of San Carlos, Philippines

Abstract:

Bamboo is one of the broadest alternative eco-materials used in construction, and various researchers have studied its physical and mechanical strength. The mechanical properties and strength are still understudied. Several genres of bamboo have been studied precisely for their mechanical properties. This study aims to determine the tensile strength of bamboo sticks and the compressive and flexural strength of bamboo culms. The materials used were whole bamboo culms and sticks, specifically *Dendrocalamus Asper Schultes*, *Dendrocalamus Merrillianos Elmer*, *Bambusa Vulgaris Schrad*, and *Bambusa Blumeana Schultes* were cut into 600 mm culm lengths (flexural test), tensile test for bamboo sticks strips in 10mm diameter at 600 mm length and 300 mm length culm for compressive strength. The bamboo specimen was treated naturally, soaking in sodium Chloride and sodium chloride plus ten percent mango polyphenol extract for 7, 14, 28, and 56 days, respectively. The results reveal that the mechanical strength of the bamboo culms of each bamboo species treated in different periods using sodium chloride plus mango polyphenol extract affects the mechanical strength of bamboo.

Index Terms:

Bamboo compressive strength, Bamboo Flexural Strength, Bamboo tensile strength. Bamboo Treatment, Bamboo Mechanical Properties, Philippine Bamboo

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