PROCEEDING OF

INTERNATIONAL CONFERENCE 2024

HYBRID EVENT

INTERNATIONAL CONFERENCE 2024

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Editorial

We are delighted to extend a warm welcome to all participants attending the International Conference 2024 on 05th - 06th November 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 multidisciplinary fields. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for International Conference 2024 contain the most up-to-date, comprehensive, and globally relevant knowledge across various disciplines. All submitted papers underwent rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings were 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 but also serve as a valuable summary and reference for further studies.

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 professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also appreciate the efforts of the technical program committee, reviewers, and authors for their dedication.

Since September 2024, the Organizing Committee has received more than 50 manuscript papers, covering various aspects of multidisciplinary research. After review, approximately 18 papers were selected for inclusion in the proceedings of International Conference 2024.

We thank all participants for their significant contribution to the success of the conference. Our gratitude extends to the keynote speakers, individual speakers, technical program committee, reviewers, and the organizing committee for their efforts in making this conference a reality.

Acknowledgement

The International Conference 2024, was successfully held in 05th - 06th November 2024. We extend our heartfelt gratitude to our colleagues, staff, professors, reviewers, and members of the organizing committee for their unwavering support in making this conference a success.

We would also like to thank all the participants who traveled far and wide to attend this conference and those who attended the event virtually, making it a truly global event. This conference provided a platform for students, professionals, researchers, and scientists to share their latest research and developments in various disciplines.

The aim of the conference was to promote research and development activities and to encourage scientific information exchange between researchers, developers, professionals, students, and practitioners from all around the world. Once again, we thank everyone who contributed to making this conference a resounding success.

Dr. Albert Munroe
President
Institute for Technical and Academic Research (ITAR)

Contents

Contents

Enhanced Photocatalytic Reactivity of Nanojunction Titania Segregated By Graphene Oxide for Decolorization of Cationic Pollutant and Antibacterial Applications

Jawza Sh Alnawmasi

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Abstract:

A high bandgap of titanium dioxide (TiO2) and a very high electron–hole recombination rate hindered its photocatalytic activity under a wide range of irradiation. Therefore, using nanoconjugate boosted the lifetime of the photogenerated charge carriers by donating an electron-accepting structure. The optimized weight of graphene oxide (GO) can enhance photocatalytic capabilities. Herein, composites of GO/TiO2 (GO 4 and 8wt. %) were produced by hydrothermal technique followed by calcination at 400 °C. As a function of the graphene oxide (GO) concentration, these composites demonstrate photocatalytic solid decomposition of methylene blue (MB) dye under solar irradiation. The samples were analyzed using XRD, SEM, TEM, UV–Vis spectra, FTIR, and XPS. Operating TiO2/GO(8wt.%) treated at 400 °C as a photocatalyst signifcantly enhanced the photocatalytic degradation of dyes compared to pure TiO2 and/or other prepared samples, resulting in complete degradation of MB 97.8% within 11 min. The GO fakes' higher adsorption/photodegradation capacity and electron transfer capability are attributed to their higher specific surface area (62 m2 /g) for this signifcant improvement in photocatalytic degradation.

Keywords:

Graphene oxide, Photocatalytic potency, Decomposition, Methylene blue.

Interventions for Opioid Use Disorder among Adolescents: A Systematic Review

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Abstract:

Background: This systematic review evaluates adolescent Opioid Use Disorder (OUD) interventions. The high rate of overdose deaths and the large number of adolescents affected highlight the opioid misuse crisis.

Methods: The review examined pharmacologic and nonpharmacologic opioid misuse interventions for 13–26-year-olds. It focused on interventions aimed at reducing substance use or treating psychiatric conditions with OUD from 2014 to 2024. The review included studies on Food and Drug Administration (FDA)-approved OUD medications and behavioral interventions such as Cognitive Behavioural Therapy (CBT) and Motivational Interviewing.

Results: The review included Eleven studies. Pharmacotherapy and CBT were found to reduce relapse rates in programs like Youth Opioid Recovery Support (YORS). Behavioural Interventions and long-term pharmacological treatments, particularly Buprenorphine, were effective in improving treatment retention and reducing substance use.

Conclusions: The review emphasizes the importance of early, age-specific interventions and the integration of substance use treatment into healthcare systems.

Keywords:

Interventions, Adolescents, Opioid Use Disorder, Heroin.

Damage Detection in Natural Fiber Composites Using Vibrational Analysis

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Abstract:

Natural fiber-reinforced composite materials offer a sustainable and eco-friendly alternative to traditional composites, particularly in the transportation sector. It is essential to develop new methods for characterizing and detecting internal defects and damages.

An innovative indicator based on the analysis of vibrational modal curvature shapes was recently proposed by A.N. Uwayed *et al.*, European Journal of Mechanics / A Solids **100** (2023) 105031, to identify damages caused by fiber breakage and delamination on carbon epoxy composite beams.

The present study is aimed at extending the use of this indicator to detect all types of damages including decohesion in plate and beam structures made of natural fiber composite materials. In these, the mechanical properties are very different from those of traditional composites. Natural fiber based materials can display strong viscoelastic behavior and their durability can be significantly different. Furthermore, the range of impact energy required to induce damage is much lower than for carbon epoxy composites.

This method not only can detect the presence of defects but also can determine their location on structures. Numerical simulations on beam and plate structures, as well as experimental vibration tests on flax fiber composites were conducted to validate the relevance of the indicator.

Exploring the Future: Metaverse and Artificial Intelligence Integration in Interior Architecture Profession

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Abstract:

This research seeks to highlight some current developments and implications in the world of Metaverse, as well as its relationship with the artificial intelligence (AI), its possible impact and implications on the interior design profession. Under these considerations, it seems that virtual and physical spaces are becoming increasingly intertwined. Therefore, the study explores how design processes are in overall transformed, perceived, and affected by them. In addition, human-AI collaboration seems to promote a new understanding of design, not only through research on immersive virtual environments in interior design, but also through the development of artificial intelligence algorithms for design decision making. In that context the research also gives a general exploration of how metaverse may improve the sustainability of interiors through user experience. Finally, the analysis draws its attention to the ethical issues that may or may not arise with the adoption of current and future AI developments. In overall, this analysis aims to explore the future of the design industry while assessing the possibilities of integrating metaverse and artificial intelligence in the field of interior design.

Keywords:

Artificial intelligence (AI), interior architecture, metaverse, design, immersive virtual spaces.

The Effect of SI Contenent on the Physical Properties of Nanostructured (Ni75Fe25)100-xSix Alloy Elaborated by Mechanical Alloying

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Abstract:

The present work deals with the effect of Si content on the physical properties of nanostructured (Ni75Fe25)100-x Six (x=0, 3.5, 6.5, 9, 12 and 15 at %) powders elaborated by mechanical alloying for a milling time of 96 h. The microstructure, hyperfine and magnetic properties of the powders were investigated, as a function of Si content, by means of X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Mössbauer Spectroscopy and Vibrating Sample magnetometry (VSM). From XRD spectra, the formation of FCC disordered Ni (Fe,Si) solid solution was evidenced after 96 h. As Si content increases, the lattice parameter and the grains size decreases (from ~28 to 15 nm); while the microstrain level decreases from 0.98% to 0.65%. From SEM micrographs, we showed that powders particles become round in shape and decreases in size with increasing Si content. For all Si content, the adjustment of Mössbauer spectra confirmed the formation of disordered ferromagnetic NiFeSi phase. From hysteresis curves, we have extracted the values of saturation magnetization and coercive field for all powders. The evolution of Ms and Hc as a function of Si content will be discussed.

Keywords:

Nanostructured powders, (Ni75Fe25)100-xSix alloy, Microstructure.

Proteolytic Activity of Bacteria Isolated from Soil

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Abstract:

Bacteria are well known for their ability to excrete enzymes into the environment. The aim of this work was to screen and isolate protease-producing bacterial strains from the bank soil of the DOJRF-TORBA dam. The collected soil samples were serially diluted and 0.1 ml of sample was spread on skim milk agar plates at 37°C for 24 hours, ten bacterial colonies showed a clear zone around the colony indicating that they had high proteolytic activity (caseinolytic) due to the degradation of casein. The protease activity of the isolates was determined both qualitatively and quantitatively, where in the first test isolates B4 and B10 showed the largest clear zones on skimmed milk agar (51.1 and 43mm) respectively. With regard to the quantitative protease assay carried out using casein as a substrate revealed a variation in yield between strains, however isolate B4 always gave the best results. Subsequently, the enzymatic assay showed that the B9 and B4 isolates gave excellent protease activities, whereas isolate B7 had low activity with only 7 µg/ml tyrosine release. The identification of these ten proteolytic isolates was based on macroscopic and microscopic characters. Among the ten isolates, five isolates (B2, B3 and B5, B7, B9) are Gram positive coccidia, Gram negative coccidia are represented by the strains (B4, B6), while the strains B1 and B8 possibly belong to the genus Bacillus. The results of this work are very motivating for further studies to identify and exploit certain strains (B4, B8, B5 and B2) which may open up possibilities for application in various industries.

Keywords:

Soil, bacteria, proteolytic activity, screening.

Gender's Effect on Willingness to Pay for Watershed Protective Function in Langat Basin, Malaysia

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Abstract:

The monetary value and worth of watershed protection services have been neglected and underestimated in land use decisions for sustainable management. Feasible payments for watershed value ecosystem services are evolving as a sustainable tool to protect and conserve ecosystems. Payment for ecosystem services (PES) discovers the potential of payment for watershed services as an economic instrument underpinning and promoting sustainable land management and financing conservation towards watershed ecosystems from households at a national level. This study examines eliciting households' willingness to pay (WTP) for watershed ecosystem services for sustainable watershed management through a conservation fund added to a monthly water bill. The total sample in the Langat Basin area was 540 covering 12 districts in Selangor state of Malaysia. Primary data were collected from the sampled upstream, middle stream, and downstream households of Langat Basin using a structured questionnaire through face-to-face interviews. The study outcomes demonstrated that the mean and Median WTP values for the male households were RM36.24 and RM41.30 using the log-logistics model while the mean and median for the log-normal model were RM36.24 and RM37.67. On the other hand, mean and median WTP values for the female households were RM35.29 and RM37.64 using the log-logistics model while the mean and median for the log-normal model were RM35.2 and RM36. The findings of this study indicated that WTP of male respondents was higher than female respondents even though the percentage difference is minor and 97.22% of households agreed to be part of PES conservation program in Langat Basin. Conservation fund for watershed ecosystem services in Langat Basin may offer an additional source of income for the state governments.

Comparison of the Efficacy of Disinfection of the Infected Canal in One Session and Several Sessions

Albion

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Abstract:

Introduction: Conventional endodontic treatment can be completed over multiple visits, yet some clinicians suggest that single-visit treatment may yield higher success rates. Both single-visit and multi-visit endodontic treatments have their unique advantages and disadvantages.

Objective: This paper aims to compare the disinfection effectiveness of treating an infected canal in a single session versus multiple sessions, based on data from academic literature.

Additionally, it discusses the etiology, treatment history, indications, contraindications, principles of infected canal treatment, and the materials used for these treatments.

Methodology: This study is based on a literature review. Data was collected from academic textbooks that contain scientifically verified and reliable information relevant to this topic.

Discussion: Meta-analyses conducted on various studies indicate that complications after single-visit and multiple-visit endodontic treatments are comparable. Furthermore, neither single-visit nor multi-visit endodontic treatment showed superior results in terms of healing or success rates. Numerous studies reported that neither approach could guarantee the absence of postoperative pain, and postoperative pain was found to be unrelated to patient age, gender, or the tooth's location.

Conclusion: Multiple studies indicate that single-visit and multi-visit endodontic treatments do not guarantee the absence of postoperative pain. It has been confirmed that postoperative pain is not associated with age, gender, or tooth location. Ultimately, there appears to be no significant difference in postoperative complications between single-visit and multi-visit endodontic treatments.

An 'American' Dark Knight: How the History of Batman's Gotham City Reflected Evolving American Culture

Matt Hodge

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Abstract:

This presentation will present textual and visual analysis of the evolution of one of the most globally popular and successful comic book superheroes of all time – Batman (who is also often coined 'The Dark Knight' and 'The Caped Crusader'). Ever since the character's debut in *Detective Comics #27* (1939), the evolving depiction of the crime-fighting masked vigilante — including his fictional home Gotham City and infamous villains that make up his Rogues Gallery — symbolizes an observable mirroring of American culture. This presentation will present and discuss specific ways that the various perspectives of Batman within comic book pages and on movie screens reflected an ever-shifting political and cultural landscape within American societies, with specific focus on how the character was morphed and reimagined continuously throughout decades spanning the four historic comic book Ages: Golden Age (approximately 1938 – 1956), Silver Age (approximately 1956-1970), Bronze Age (approximately 1970-1985), and Modern Age (approximately 1985-Present). Examples of discussion topics will include wartime propaganda, culturally-engrained patriotism, moralistic and religious influences, government-sponsored political efforts, and contemporary psychological fascinations with underlying victimhood of villainous characters.

Evaluating the Success Factors of Social Enterprises in Emerging Markets: An Empirical Study

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Abstract:

Social enterprises are increasingly recognized for their dual focus on addressing social issues and achieving financial sustainability. In emerging markets, where economic volatility and social challenges are pronounced, understanding the success factors that contribute to the effectiveness of these enterprises is critical. This empirical study aims to identify and evaluate the key determinants of success for social enterprises operating in emerging markets. By employing a mixed-methods approach that includes quantitative surveys and qualitative interviews, the research explores how factors such as access to resources, leadership, business model innovation, and stakeholder engagement influence the performance and impact of social enterprises. The study finds that diversified funding sources, strong leadership, innovative business models, and robust stakeholder relationships are crucial for the success of social enterprises in these contexts. These findings offer valuable insights for social entrepreneurs, investors, and policymakers seeking to enhance the effectiveness and sustainability of social enterprises in emerging markets.

Keywords:

Social Enterprises, Emerging Markets, Access to Resources, Leadership, Business Model Innovation, Stakeholder Engagement, Financial Sustainability, Social Impact

Building Up: Strategies for Livable High-Density Urban Spaces

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Abstract:

This study explores strategies for creating livable and sustainable high-density urban areas, with a particular focus on vertical living solutions and mixed-use developments. Through a comprehensive review of literature and case studies, both successful and less effective projects are examined to understand the factors contributing to varied urban outcomes. The analysis includes cities like New York and Tokyo, where high-density living optimizes land use and public transportation. The study highlights successful vertical mixed-use developments such as Marina Bay Sands and Hudson Yards, and sustainable practices like the green design of Milan's Bosco Verticale. In contrast, the research also investigates projects facing urban challenges, identifying recurring issues such as overcrowding, insufficient public spaces, and inadequate infrastructure. Following a thorough analysis of these cases, practical strategies are proposed to improve struggling areas, offering insights for urban planners and policymakers to enhance the livability and functionality of high-density developments, with a strong emphasis on sustainability, community well-being, and inclusivity.

Keywords:

Urban planning, High-density, Sustainability, Mixed-use development, Vertical living, Overcrowding, Urban environment, Urban revitalization.

Gramophone 78 rpm Recordings and Ethnomusicological Practice in Socialist Albania

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Abstract:

Although Albanians were a small, politically fragile and economically underdeveloped ethnic group, several record companies produced a sizable amount of Albanian music recordings during the first half of the XX century. Despite their great musical and cultural value, they have been almost totally neglected by ethnomusicology researchers. The aim of this paper is to shed light into the ideological grounds for this neglect during the socialist period. Initially, a general overview of Albanian language gramophone recordings obtained through archival work, company catalogues and other sources, is presented. Then, considering the ideological framework and cultural policy of Albanian communist regime, an interpretive approach is taken regarding the aforementioned neglect. One of the main findings is that the soundscape we get from these recordings is not in accord with the normative socialist identity the regime was seeking to impose on Albanians. The hostile stance toward Western capitalist countries, leading to a view of recording companies as exploiters of Albanian music and musicians, and the country's self-isolation imposed other crucial limitations. It is concluded that it is timely to engage deeply with Albanian gramophone recordings, whose rich soundscape will yield important historical and cultural insights.

Keywords:

Gramophone recordings, Albania, socialism, normative identity, traditional music.

Comparison of Diagnostic Accuracy of Cone Beam Computed Tomography and Digital Radiography for Detection of Vertical Root Fractures with and without Gutta Percha

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Abstract:

Objective: Diagnosis of vertical root fractures (VRFs) is critical in endodontics; which most of the times occurs in endodontically treated teeth with root canal fillings such as gutta percha. Despite Cone Beam Computed Tomography (CBCT) has significantly enhanced image quality compared to digital radiography (DR) which aid the diagnosis, artifacts has remained as a problem in VRF detection. The aim of this study was to compare accuracy of CBCT and digital radiography system in vertical root fracture with presence and absence of gutta-percha.

Methods: In this experimental *in vitro* study, 60 premolar teeth were cut at the cementoenamel junction .The teeth were randomly divided into two groups; for one group root canal therapy was done and the roots filled with gutta-percha. The other group was the control one .At the first stage CBCT scan and digital radiography was done and subsequently, vertical root fractures were induced for all samples. Then all the teeth were scanned by CBCT and digital radiography system and three observer assessed CBCT images and digital radiographies for presence of vertical root fracture. ANOVA and weighted Kappa tests estimated the diagnostic accuracy values and inter-observer agreement.

Results: All values for CBCT were higher than Digital radiography except for absolute specificity and negative predictive value (p=0.409, p=0.053). In both imaging systems, there was no statistical difference between presence and absence of gutta-percha. (p=0.599, p=1.000, p=0.673, p=0.373).

Conclusion: Diagnostic accuracy of vertical root fracture was not influenced by presence or absence of gutta-percha. Additionally, CBCT imaging system had higher diagnostic accuracy in comparison of digital radiography.

Keywords:

Cone Beam CT, Digital radiography, Gutta Percha, Vertical Root Fracture.

Tongue Reconstruction Post Partial Glossectomy during the COVID-19 Pandemic

Dr. Mohammad Alessa

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Abstract:

Introduction: The COVID-19 pandemic has necessitated temporary modifications in the current head and neck oncology treatment paradigm. Till date, no definite treatment for COVID-19 has been discovered. Considering the situation of the global COVID-19 outbreak, methods that minimize patient visits with no compromise in efficacy should be considered. The optimal method for tongue reconstruction has not been determined yet. The artificial bilayer membrane has been used as mucosal substitute in few cases of tongue reconstruction with promising results.

Case Presentation: We present two cases of tongue reconstruction with acellular dermal matrix post partial glossectomy for tongue carcinoma during the COVID-19 pandemic. Both patients showed good recovery and healing, and no side effects and/or complications were reported.

Discussion: The acellular dermal matrix is not a standard technique for tongue reconstruction but one of the available options. The few reported cases in literature showed promising results in regard of function and healing.

Conclusion: We believe the use of acellular dermal matrix can help in preventing the spread of COVID-19 because of the absence of donor morbidity, decreasing post-operative hospital stay and visits.

Musicological Subjects Course Assessment in Outcomes-Based Curriculum of Indonesian Higher Arts Education

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Abstract:

This study considers specific assessment problems in the musicological subject course at an Indonesian higher arts education related to final score grading results, that unsatisfied students sometimes question. This study aims to formulate the best, fair, and objective assessment approach in musicological theory subjects. This study uses one of the descriptive research designs, the assessment and evaluation method, which involves a systematic process of gathering, interpreting, and using information to make decisions about a course assessment. This study identified that although the assessment administration system in Indonesia's universities, including higher arts education, currently accommodates the demands of an outcome-based curriculum as demanded by changes in high policy in Indonesia, most lecturers still apply the traditional assessment model based mainly on semester exams. Some lecturers argue that music differs from other fields, so the musical form analysis assessment approach carried out so far is still relevant. This study proves that scoring that is objective, fair, and in favor of students, as has been applied to general fields, can also be applied to music studies. The ability of lecturers to explain the mechanism of a comprehensive assessment approach and involve class participants in the process will impact the acceptance of exam results with sincerity to students.

Keywords:

Assessment, music, higher arts education.

Endoscopic DCR Maximizing Success

Dr. Omar Abu Suliman

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Abstract:

An Oral Presentation highlighting the surgical anatomy and surgical steps with tips for having a successful Endoscopic Dacryocystorhinostomy (DCR) Surgery based on recent publication.

Along with new techniques for specific conditions like punctual agenesis.

Spatio-Temporal Distribution, Environmental Risk Assessment, and Potential Sources of Pharmaceutical Active Ingredients Commonly Found in the Zala River

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Abstract:

The spatio-temporal distribution of concentration and environmental risk levels of the 3 most frequent Pharmaceutically Active Compounds (PhACs) - caffeine, carbamazepine, diclofenac - in water matrices worldwide were investigated in River Zala in related to the local spas and WasteWater Treatment Plants (WWTPs). According to international comparison, the concentration of diclofenac was very high (up to 2530 ng/L), and this PhAC presented high environmental risk level in the most cases. Concentration of only diclofenac showed correlation with number of medical treatments in spas depending on time. The reason for this can be related to the fact that the spas in the investigated area have thermal waters, which have a beneficial effect on arthritis and rheumatic pain. Diclofenac is used typically for this kind of health problems. Further surprising result that in the main tourist season (summer) elevated concentrations of the 3 PhACs were not detected which can be explained by the strong and lasting UV radiation, furthermore the microbial activity and composition of activated sludge depending on temperature. Summarized, our data suggest that the local WWTPs should be reviewed, additionally necessity of treatment of used thermal water should be considered for sustainability.

Cybersecurity Intrusion Detection Systems: A Comprehensive Survey on Combating Evolving Threats through Adversarial Attack Strategies

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Abstract:

Cyber dangers have become more common in recent years, making it even more important to have strong intrusion detection systems (IDS) that can find and stop hostile attempts. The goal of this paper is to repeat and expand on the results of the state of the art of Intrusion Detection Systems and Adversarial Attacks, which looked into how machine learning-based IDS can be hacked in different ways. We test how well different machine learning models work when they are attacked using well-known methods such as the fast gradient sign method, the Carlini and Wagner attacks, and projected gradient descent. Our study uses a wide range of experiments to check how well these attacks work and how strong the models are. In addition, we look into new ways to protect IDS against adversarial changes, such as adversarial training and feature reduction techniques. These will help IDS find threats more quickly. The goal of our repeat study is to add to the current conversation in the fields of hostile machine learning and cybersecurity by giving more information about the arms race between adversarial attacks and defense strategies. In the end, this study aims to give valuable direction that can help in developing IDS that are stronger and better able to protect against new cyber dangers.

Keywords:

Cybersecurity, fraud detection, cyber threats, Internet of Things, cloud computing.