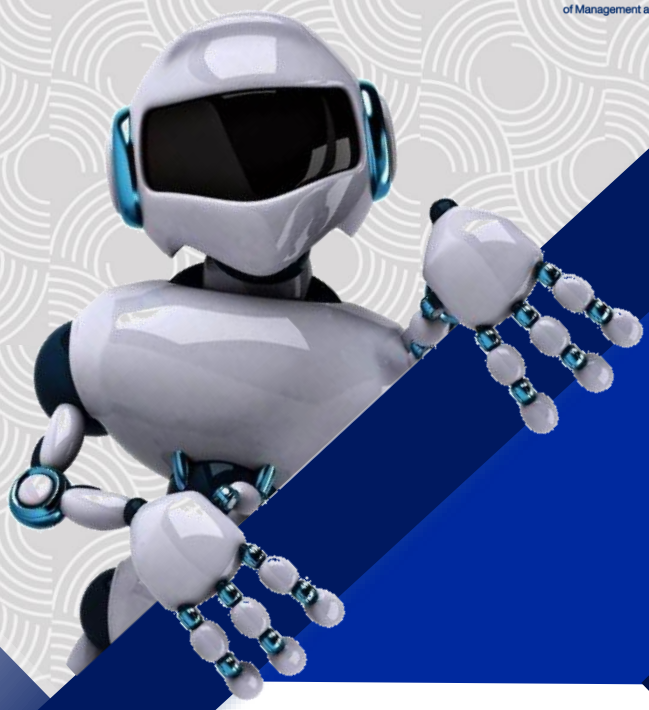
20 years
عشرون عاماً من العطاء والتميز

كلية عُمان
OMAN COLLEGE
of Management and Technology للإدارة والتكنولوجيا



Oman College of Management and Technology
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Proceeding (Abstracts)

International Conference on Sustainable Design & Artificial Intelligence Challenges & Opportunities

SDAICO-2024

3 June 2024

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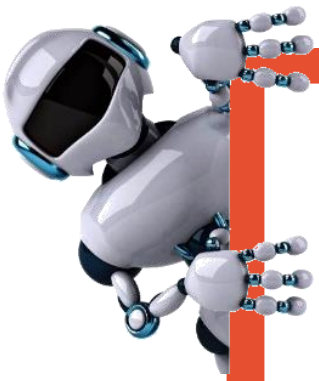

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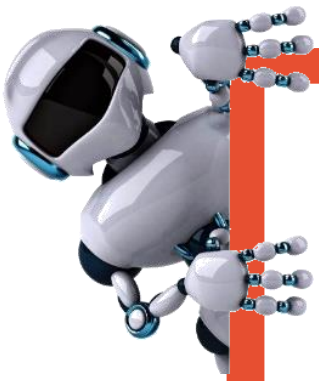
ABOUT OCMT

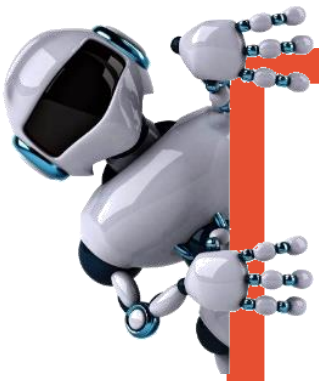
Oman College of Management and Technology (OCMT) was established in 2004 as a private college. Its mission is that it strives to provide the local community with an environment that is conducive to the effective teaching-learning process by well-qualified professionals supported by the latest technological facilities. We also seek to provide society, with graduates who exhibit The sound knowledge and skills required to meet the challenges of a dynamic modern society. OCMT's vision is that it aspires to become a leading institution of higher education nationally and regionally, where quality and excellence are maintained in line with international standards, to produce top-caliber graduates with knowledge, skills, and attitude.

Dr. Hazem Migdady (Chair), Dean



SDAICO-2024
ABOUT THE CONFERENCE

Academics are fully conscious of the existence of the developments that have taken place in the field of teaching and learning, not only in the Sultanate of Oman and the Arab countries but throughout the world with the advent of sustainable design and artificial intelligence technologies and applications. And the ongoing debate in the academic world about the pros and cons of using this technology in the educational process in various higher education institutions. Here, universities and colleges have the task of leading the scientific discussion in a targeted manner and basing the expected change on solid scientific foundations to avoid the negative effects of the use of artificial intelligence, as it is a technology that is available to everyone and is difficult to limit.



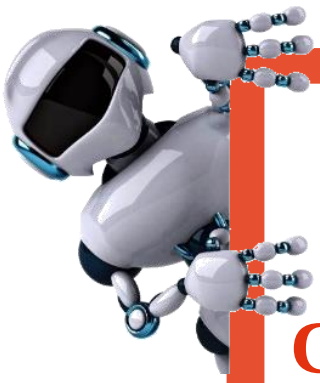
SDAICO-2024 ABOUT THE CONFERENCE

Therefore, it must be employed in a way that serves the educational process increases the quality of program outputs, and helps in promoting the product of scientific research in educational institutions according to a well-studied scientific methodology. Therefore, the Oman College of Management and Technology, and on its behalf Dr. Hazem Miqdadi as the President of the proposed conference, intends to host the International Conference on Sustainable Design and Artificial Intelligence, Challenges and Opportunities (SDAICO-2024). It welcomes interested scientists and practitioners to present their knowledge about recent developments in theoretical and experimental research from all fields of design. Modern applications of artificial intelligence in design education, its current applications in the labor market, and addressing best practices.

SDAICO-2024

CONFERENCE OBJECTIVES

SDAICO -2024 Conference seeks to bring together scholars, scientists, and industry professionals to explore the most recent developments and applications of artificial intelligence in sustainable design and business. The goal of the conference is to explore the ways that didactics and research could tackle the complex issues that the design sector faces. The conference maintains high-quality research by multiple blind reviewing processes which are done by experts and students in the fields of the conference and from various academic institutions. It also provides a platform for practitioners and educators to present and discuss the most recent trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Design, and Artificial Intelligence. It provides exceptional value for students, academics, and industry researchers.



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CONFERENCE TOPICS

Track 1: Artificial Intelligence and Creative Design

- Artificial intelligence for building design
- Collaborative and Participative Design
- Big and Digital Data in Architecture
- Digital Design and Construction for Sustainable Built Environment
- Human-Computer Interaction in Design
- Information Technology and Digital Heritage
- Internet of Things for Built Environment
- Shape, Form, Geometry, and digital architecture
- Smart and Responsive Design
- Smart Cities, challenges, and opportunities
- Theory and Practice in Digital Architecture
- Virtual Reality in Architecture
- Artificial intelligence for construction
- Artificial intelligence for urban design and cities
- Artificial intelligence for energy-efficient building design
- Creative design optimization via Artificial intelligence
- Artificial intelligence and robotics in architecture
- Artificial intelligence and natural architecture
- Artificial intelligence for interior design

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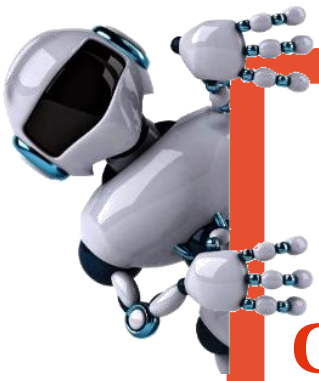

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CONFERENCE TOPICS

Track 2: Artificial Intelligence and the Future of Education and Business

- Artificial Intelligence in Education Technology
- Artificial Intelligence& adaptive learning
- Artificial Intelligence& Dynamic content for business
- Design and Use of Human- Artificial Intelligence for Learning
- Digital Learning
- Distance learning system
- Education in Digital Fabrication
- Educational Knowledge Management Technology
- Educational robotics
- Educational Technology System Architecture
- Human-Computer Interaction in Teaching System
- Inequity and Inequality in Education
- Innovative Applications
- Intelligent and Interactive Technologies in an Education
- Learning using visual reality
- Model and Architecture of Educational Technology System
- Models of Teaching and Learning
- Online and Distance Learning
- Smart learning environment
- Artificial Intelligence and the Future of Education

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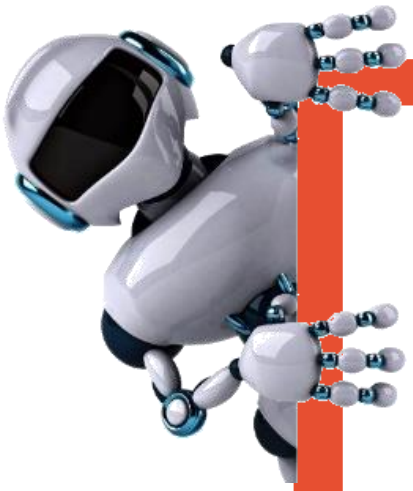

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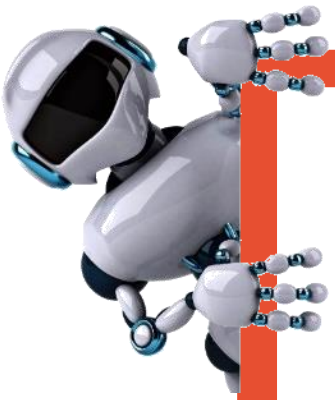

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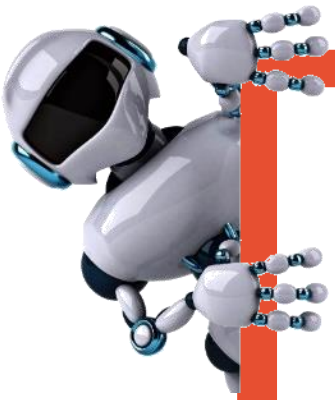

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Content Abstract Proceeding

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Content 2 - Titles

Abstract Proceeding

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Advanced-Data Analytics for Water Loss Management and Leakage Detection using Machine Learning Models: A Case Study of Al Seeb Area, Khoudh Six

Ibrahim Al Balushi[a], Muzammil Hussain[b*]

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Abstract:

Using a novel machine learning framework, this study addresses water losses in urban water distribution networks. The focus is on the CatBoost classifier, which predicts leaks with 99.6% accuracy. Using a curated dataset and multiple ML algorithms, the study discovers important relationships that influence leak detection and increase operational efficiency. Despite challenges such as overfitting and limited data hindering broader applicability, the results highlight the need for diverse data and hybrid models. Future work aims to refine these models through real-world testing and assess their environmental and economic impacts.

Keywords: *component, CatBoost; Decision Tree, K- Nearest Neighbour, Naïve Bayes, Random Forest, Support Vector Machines.*

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Intelligent Weed Detection using Machine Learning

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Abstract:

The study aims to create a sophisticated weed identification system that utilizes machine learning algorithms. Using image analysis techniques, the main goal is to develop and execute a model that can effectively recognize and differentiate crops and weeds. These models will form the basis for an automated weeding system, allowing for accurate and selective weed removal while minimizing the need for physical labour and harmful chemical herbicides. This study will encompass crucial stages, such as data collecting, preprocessing, model training, and deployment. Initially, an extensive dataset of images illustrating crops and diverse weed species will be gathered and organized. The dataset will be subjected to preparation procedures, including image resizing, augmentation, and normalization, to ensure consistency and improve the training process. Deep learning approaches such as convolutional neural networks (CNNs), will be utilized for model training and optimization. These algorithms will acquire the ability to identify and isolate essential characteristics from the image data, facilitating precise classification of crops and weeds. After completing the training and validation process, the created models will be included in an automated weeding system. This System will utilize computer vision techniques to analyses field images in real-time and detect instances of weed infestations. According to the model's predictions, specific and focused methods of removing weeds can be used, eliminating the need for using herbicides without discrimination and reducing the unintended harm to crops.

Keywords: *Weed Detection, Machine Learning, Convolutional Neural Network.*

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Pack Your Bag: Revolutionizing College Supplies and Course Recommendations Online

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Abstract:

The study aims to create a sophisticated weed Pack your bag! an online store that not only provides essential college supplies but also offers curated suggestions for online courses. As we dive into this project, we'll explore its context, significance, and the exciting benefits it brings to the dynamic world of higher education. The study aims to create a college supplies web application, that provides unique college supplies and online courses to students. The supplies can be sold not only to students but professors and anyone working at an office job, but our focus is students. The application will have, a login page, registration, home page, shopping page, Courses or workshops page, add to cart and payment page. Pack your bag, an online store that not only provides essential college supplies but also offers curated suggestions for online courses. As we dive into this research, we will explore its context, significance, and the exciting benefits it brings to the dynamic world of higher education. The application aims to create a college supplies web application, that provides unique college supplies and online courses to students. The supplies can be sold not only to students but professors and anyone working at an office job, but our main focus is students. The application will have, a login page, registration, home page, shopping page, Courses / workshops page, add to cart and payment page.

Keywords: *Online store, College supplies, Online courses, Courses or workshops page.*

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The Sustainable development of Urban Planning and architectural Identity in Barka City – Oman

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[b] *Department of Design, Oman College of Management & Technology , Sultanate of Oman*
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Abstract:

This study examines the concept of architectural identity and its importance in attaining sustainable urban growth, using the seaside city of Barka in Oman as a model. Architectural identity refers to the unique features and attributes that distinguish a particular site or structure, which are influenced by cultural, historical, social, economic, and environmental aspects. As Barka rapidly urbanizes, there is an urgent need to strike a balance between modern development needs and the preservation of the city's distinctive architectural legacy and urban fabric. The study examines Barka's current urban morphology, vernacular architecture, and community needs to create a framework for guiding future growth in a balanced manner. It focuses on combining contemporary designs with traditional Omani architectural components to create a unified feeling of place and social sustainability. Maintaining architectural identity is critical not only for aesthetic reasons, but also for promoting cultural continuity, community resilience, and inhabitants' sense of belonging. By evaluating varied architectural styles throughout neighborhoods, the study identifies contextually relevant planning and design interventions that preserve Barka's roots while improving livability. Finally, it seeks to educate politicians and urban practitioners on how to create an inclusive development path that respects Barka's unique identity while meeting modern needs.

Keywords: *Sustainability, Urban Planning, Architectural Identity, Oman.*

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Bridging the Gap: Investigating Student Engagement and Faculty Satisfaction in Artificial Intelligence-driven education

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Abstract:

The debate about the feasibility of using artificial intelligence applications is still going on in academic sector, but this will not stop users from applying AI in various field and we notice in many colleges and universities around the world, that faculty members are still thinking and discussing on how to use SI in teaching and learning and policy makers are negotiating about setting regulations, and students have overcome this in stages and have begun to use and apply AI tools in many educational aspects, this research aims to investigate the gap be-tween students practice and faculty satisfaction rate with the integration of Artificial Intelligence (AI) in teaching and learning. The study focuses on understanding the perceptions and challenges associated with the incorporation of AI technologies in educational sectors. To identify common students' practices and variations in faculty member's responses towards using AI tools in education, trying to investigate the gabs and analysis the causes of such gabs. The study will also shed light on the key factors influencing faculty members' satisfaction rate with AI Integration. This study explores the impact of AI in pedagogical approaches and overall teaching effectiveness. Several survey results will be presented and compared to conFigure that gap and to assess faculty members 'attitudes towards AI integration, to gather com-prehensive data from faculty members across diverse academic discipline in several Universities. Findings from this research are expected to contribute to the ongoing discourse on AI-driven education. Also, provide valuable input for colleges and policy makers to enhance and regulate the use of AI in teaching and learning environments. Overall, the study offers recommendations for bridging the gap, addressing the challenges, and fostering an environment conducive to the effective integration of AI teaching and learning.

Keywords: *Artificial Intelligence (AI), Integration, Effectiveness, Satisfaction, Pedagogical, Engagement.*

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Smart Learning Environments: A Comprehensive Review on Artificial Intelligence and Learning Theories

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Abstract:

The term "smart learning" is now commonly used to describe online education. It shows how learners can use knowledge and skills more easily, successfully, and simply because of modern technologies. The goal is to create a smart learning environment that is relevant, timely, and efficient, allowing students to learn more effectively and successfully. By setting realistic goals, focusing on the big picture, and ensuring a clear timeline for task completion, a smart learning environment can provide a more engaging and efficient educational experience for students. The term "smart technology" describes remote-controllable and internet-connected devices that are used in smart learning environments (SLEs) to personalize and improve the educational experience for each student. This research paper explores the use of technology, specifically artificial intelligence, in creating a smart learning environment. A comprehensive review has been conducted in two dimensions, the dimension of AI in smart learning and the learning theories for smart learning environment. The study reveals that the impact of artificial intelligence in enhancing student performance and instructional design has received wide attention from the academic research. At the same time, the learning theories like activity theory, self-determination theory, and connectivism learning theory, collaborative learning theory, and situated learning theory are still explored by academic community within the context of artificial intelligence and smart learning environment.

Keywords: *Smart Learning Environment, Artificial Intelligence, Learning Theory, IoT.*

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Stress Sync: An AI based Application for Stress Management and Academic Prioritization to enhance performance in Oman

Arisha Khan[a], Fathima Hasna Zainulabdeen [b], Fayza Azmin Ishra [c], Vikas Rao Naidu [d*]

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Abstract:

College students experience high levels of stress from academic demands and personal pressures. In this paper, "StressSync" is proposed as a user-friendly framework for a stress management system tailored especially for college students with the inclusion of an academic task priority list management system. Such a system will help students manage their academic workload while also keeping an eye on their stress levels. Students can receive real-time data on their stress scores which are calculated using data from relevant stress factors, helping them understand on taking proactive and knowledgeable ways of dealing with their academic stress, and look after their mental well-being. Stress Sync offers personalized stress management strategies, uniquely tailored to each student's needs. A strong community virtual network is also part of the framework, which emphasizes providing students with the necessary resources to look after their mental health. The aim of this framework is to encourage students in Oman to navigate their academic challenges in life while also prioritizing their mental well-being.

Keywords: *Stress Management Systems, Academic Task Management Systems, Academic stress, Task Priority Management, Stress factors, Academic Task Priority Systems.*

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Biophilic Design as Participative Design (Restaurant Case Study)

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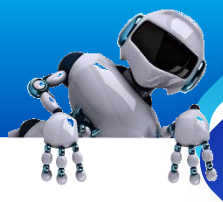
Abstract:

I have been developing the concept for a new "Biophilic Organization" to bridge the gap between organizations and the natural world, despite their claims of sustainability. By drawing from fields such as evolutionary psychology and architecture, this research aims to establish a robust link between nature and culture within organizations, demonstrating how this connection can significantly contribute to sustainability. Furthermore, the paper takes a comprehensive approach to sustainability, recognizing and addressing the various challenges. Regarding the restaurant concept, it is commercial in nature, and I am planning a comprehensive revamp. After conducting a thorough assessment of the restaurant, I have identified key areas for improvement with a unique style in mind. Upon researching the structural aspects that require enhancement, I have concluded that expanding the restaurant's space and seating capacity is paramount. Furthermore, I have diligently studied three comparable eateries and drawn inspiration from their concepts to infuse into my own establishment. Despite the upcoming competition from restaurants near the Amman Mall construction, I am confident that my restaurant will differentiate itself with a unique interior design that captivates visitors with an abundance of gorgeous indoor plants, exuding life, innocence, and beauty..

Keywords: *Biophilic, Interior Design, Public Space Design.*



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Enhancing Walkability in Smart Cities: A Comprehensive Literature Review and Strategic Framework

Lamiaa Shaheen [a], Intissar Bouzekri [b*]

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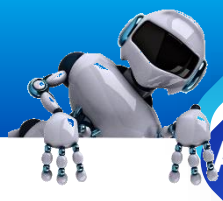
Abstract:

This paper explores the intersection of urban planning and smart city technologies in enhancing walkability, a crucial aspect of creating sustainable and livable urban environments. Through an extensive literature review, the study identifies key factors contributing to walkability, such as safety, accessibility, and comfort, and examines the benefits of walkable cities, including improved public health, economic vitality, and social equity. The concept of the "15-minute city" is introduced as a model for promoting walkability by ensuring access to essential services within a short distance. Additionally, the paper discusses technological advancements and case studies of successful walkability initiatives in smart cities worldwide, highlighting the role of smart walkways, street lighting, public spaces, crosswalks, bike-sharing systems, and digital placemaking in enhancing pedestrian experiences. The comparative analysis of different approaches and strategies provides insights into their key features, benefits, and challenges, offering a comprehensive overview of the current landscape in this field. The study concludes with recommendations for future research and practice to address existing gaps and challenges and further promote walkability in smart cities.

Keywords: *Walkability, Urban Planning, Smart Cities, Smart Technology, Pedestrian-Friendly Design, City Planning.*



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Biophilic Design: Enhancing Human Health and Wellness Indoors

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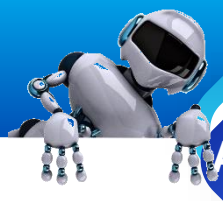
Abstract:

In the realm of interior design, biophilic design has emerged as an innovative approach that aims to reconnect humans with nature by seamlessly integrating natural elements into built environments. This study explores the profound impact of biophilic design principles on occupant health and well-being across various interior spaces. Our analysis incorporates both quantitative and qualitative data from prior research and empirical investigations. We propose that biophilic design fosters positive psychological states by reducing stress levels, elevating mood, and enhancing overall mental health. Designers incorporate features such as natural lighting, organic forms, textures, patterns, and living plants to create immersive experiences that encourage relaxation, focus, and creativity among building occupants. Furthermore, our findings suggest that biophilic design may offer substantial physical health benefits, including lower blood pressure, improved disease resistance, and better air quality. We present several case studies demonstrating the successful implementation of biophilic design across diverse indoor settings, such as offices, residential buildings, healthcare facilities, and educational institutions. These examples illustrate how biophilic design not only enriches user experience but also advances sustainable development goals by promoting social equity and environmental stewardship. Our research concludes that biophilic design holds significant potential to vastly improve human health and well-being while fostering a more harmonious coexistence between people and their surroundings. We strongly recommend further exploration of this fascinating field, particularly concerning emerging technologies like augmented and virtual reality, which could substantially broaden the application of biophilic design beyond traditional architectural boundaries.

Keywords: *interior design, biophilic design, Human health, nature.*



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AI-powered tutoring system designed for Omani primary school curriculum

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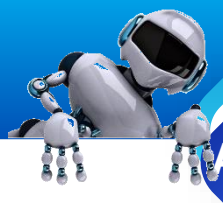
Abstract:

The growing race to develop Intelligent tutoring systems; and the transformation of traditional education systems into smart systems using artificial intelligence technology. Which shortened the time to improve the level of education and help learners to a deeper understanding of the material studied taking into account different levels of understanding. It is possible to devise a definition of Intelligent tutoring systems (ITS), a software that serves learners and contains elements of artificial intelligence.

ITS technologies have become widely used in various fields of education, including science and mathematics education, which has led to a breakthrough in the progress of learning. This program tracks students' comments and opinions. The program then draws conclusions about the weaknesses students face, offering tips and advice that will motivate them and provide additional work to suit their weaknesses(Sulaiman Al Shabibi and Silvennoinen, 2018). In this thesis, we will present proposals for the introduction and application of ITS to the students of Oman

Keywords: *AI, Machine Learning, Learning Management System*



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Learning Analytics and Knowledge Management Systems for Higher Education

Jitendra Pandey [a], Souzan Hannawi [b], Vishal Dattana [c*]

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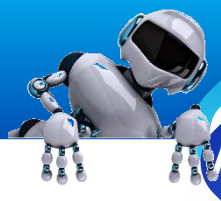
Abstract:

The proposed research investigates the impact of communication technologies and information systems on knowledge management in e-learning environments. The authors leverage the established models of Nonaka & Takeuchi and Harsh (including knowledge reusability and sharing in a 3D context) to explore this relationship. Their findings suggest that incorporating knowledge sharing and reusability significantly enhances e-learning effectiveness. Furthermore, research indicates that data analytics (DA) presents a valuable tool for enriching the learning experience. DA facilitates the discovery of new learning areas and fosters qualitative learning within higher education. This is achieved through its extensive capabilities in analyzing existing knowledge. To ensure the inclusion of quality knowledge, the well-regarded Approach-Deploy-Review-Improve (ADRI) model is also considered. Finally, the potential of knowledge repositories in diverse educational settings is emphasized.

Keywords: *E-learning, Data Analytics, Knowledge Management, Artificial Intelligence.*



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Building a Smarter, Safer City: Leveraging AI for Enhanced Security Systems

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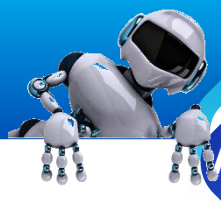
Abstract:

Cities worldwide face growing public safety concerns. The rapid development of smart cities, fueled by information technology advancements, unlocks social and economic potential but also presents significant security challenges. However, smart cities offer a unique opportunity to improve quality of life through intelligent networks connecting objects and mobile devices. As outlined in the Slovak Republic's National Strategy for Long-Term Sustainable Development, such advancements should prioritize sustainability, ensuring the well-being of current and future generations. Security and safety are fundamental for a high quality of life. Natural disasters, crime, violence, and public health threats are just a few emergencies that threaten cities and sustainable urban development. Artificial intelligence (AI) can empower smart systems to capture critical safety data and respond swiftly and efficiently to incidents. These interconnected systems can monitor, predict, and prevent suspicious activities, both ongoing and potential. This research proposes an AI-powered mobile application that integrates the natural environment and technology. This app aims to: Enhance public safety and security processes by leveraging a network of intelligent systems. Foster a healthier living environment for citizens. Provide easy access to emergency services to ensure preparedness and rapid response. Facilitate swift recovery and rehabilitation efforts. Establish a platform for community volunteer networks. Offer online public safety awareness programs for citizens.

Keywords: *Artificial Intelligent, Safer City, Security Systems.*



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Ethical Considerations of AI-powered Trauma Detection

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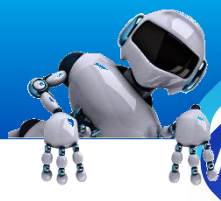
Abstract:

Childhood trauma can have a profound impact on a person's life, and early intervention is crucial for promoting healing and well-being. Artificial Intelligence (AI) has emerged as a potential tool for identifying signs of childhood trauma through analyzing speech patterns, textual data, or other digital footprints. This research explores the ethical considerations surrounding the use of AI-powered tools for childhood trauma detection. We will conduct a comprehensive review of relevant literature on AI ethics, childhood trauma, and data privacy. This will include examining potential biases within AI algorithms, the implications of data collection and storage on children's privacy, and the potential for misdiagnosis and unfair labeling. This research aims to identify and analyze the key ethical concerns associated with AI-powered trauma detection. We will propose specific recommendations for mitigating these risks and ensuring the responsible and ethical development and use of these technologies. By critically examining the ethical implications, this research can contribute to the responsible development and implementation of AI tools in childhood trauma detection. Ultimately, the goal is to leverage AI to enhance our ability to identify and support children who have experienced trauma, while ensuring their privacy and well-being are protected

Keywords: *Artificial Intelligence, Childhood Trauma, AI Tools, Data Analysis, Psychology.*



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Integration of Augmented Reality and Artificial Intelligence: A Review of Framework for Immersive Learning in Oman Vision 2040

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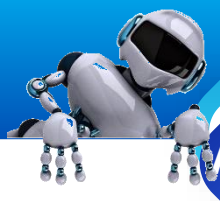
Abstract:

Technological breakthroughs are driving a rapid transition of the educational landscape. Among these, artificial intelligence (AI) and augmented reality (AR) stand out as being crucial in changing how knowledge is transmitted and gained. The Oman Vision 2040 seeks to use these technologies to support a creative and forward-thinking educational system. This article presents a thorough framework for immersive learning that is in line with Vision 2040 and examines the integration of AR and AI in higher education institutions (HEIs) in Oman.

Keywords: *Immersive Learning, Educational Technology Integration, AR/AI in Higher Education, Vision 2040 Oman, Digital Transformation in Education.*



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Eco Friendly Design of Dental Clinic

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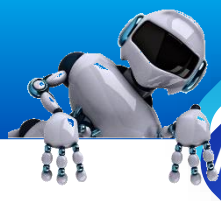
Abstract:

The idea of this project is to design a dental clinic in Oman aims to be an eco-friendly facility, focusing on energy efficiency, biomass heating, natural and recyclable materials, and collaboration with local manufacturers to minimize carbon emissions. The clinic will accommodate 10-20 patients and have five rooms, including a family hall, treatment rooms, laboratory, store, and restroom. The clinic will have 5-10 employees and will be designed to be functional and efficient. The research will help redesign a residential building into a dental clinic, promoting a sustainable environment and environmental consciousness.

Keywords: *interior design, dental clinic, sustainability, eco-friendly.*



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The Revolutionary Impact of AI on Design from Concept to Creation

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Abstract:

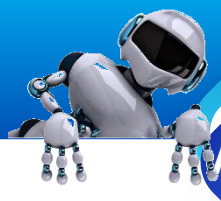
Artificial Intelligence (AI) is revolutionizing the design industry, enhancing efficiency, creativity, and innovation. The integration of AI technologies into design processes has opened new possibilities for generating novel ideas, optimizing workflows, and improving user experiences. This paper explores the impact of AI on design practices, showcasing its transformative potential from conceptualization to realization.

The primary objective of this study is to examine the impact of AI on the design process, focusing on productivity, collaboration, and decision-making. The study aims to analyze how AI-powered design tools and algorithms enhance designers' ability to generate new concepts, optimize designs, and collaborate with AI systems. Additionally, the study aims to explore the ethical considerations and challenges associated with AI in design, such as bias, transparency, and safety.

This study will employ qualitative research methodology, including literature review. The literature review will examine existing research on AI in design, focusing on productivity, collaboration, and decision-making. Ethical considerations will be addressed through a critical analysis of the literature.

The findings of this study will contribute to the existing body of knowledge on AI in design, providing insights into its impact on productivity, collaboration, and decision-making. Additionally, the study will inform designers and researchers about the ethical considerations and challenges associated with AI in design, paving the way for responsible and beneficial use of AI in the field.

Keywords: *Artificial Intelligence, Design Processes, Design Innovation, Ethical Considerations.*



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Designing Intelligent Library as a response for Artificial Intelligent

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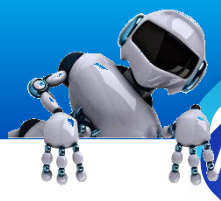
Abstract:

Redesigning the Institute's library using strategies based on artificial intelligence in library redesign, creating a more efficient, attractive, user-focused environment that meets the evolving needs of beneficiaries while empowering library professionals with advanced tools for collection management and user services. The motivation of the project is to redesign the institute's library designated for all individuals aged 18 years and above, in order to achieve Oman Vision 2040. A smart library will be built to support services and serve as a center for education and holding seminars and lectures. It was expanded to accommodate a larger number of visitors. The current library has not been renovated or redesigned since the founding of the institute, and it occupies a large part of the building. Establishing a modern library that meets the needs of students, teachers, and employees, while making optimal use of the available space. By introducing smart technologies and exploiting the empty spaces adjacent to the library. This includes implementing an Internet- based management system, smart services, library entrance, reception area, coffee area, storeroom, computer area, self-study rooms, and meeting rooms equipped with a smart board.

Keywords: *Artificial Intelligence, Intelligent Library, smart services.*



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Cloud Accounting: A Theoretical Overview

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Abstract:

The literature on the topic of the Use and Integration of Accounting Software is quite extensive, but less broad in the context of challenges faced by SMEs, and even more and narrow when we look at the limited literature on the numerous challenges faced in a geographically dispersed location such as Oman. This literature review analyzes and investigates existing research on the challenges faced by SMEs in using and integrating accounting software, to find out the most significant and relevant variables previously identified through previous studies. The aim being to apply a select few of those variables and apply them to the context of Oman to identify the specific obstacles that Omani SMEs face. The literature review involved a methodical exploration of diverse academic databases, employing specific search terms such as "SMEs," "accounting software," "challenges," "adoption," "integration," and "small business." The selection criteria focused on peer-reviewed articles and subsequently, a comprehensive evaluation of abstracts and full-texts led to the identification of about 20 pertinent studies for in-depth analysis. The research looked upon coordinate with the central and fundamental themes and dimensions of the topic, and mainly consists of secondary data including peer reviewed journals on the importance of accounting software and the benefits for SMEs in comparison with traditional or manual accounting. Moreover, the main obstacles faced by SMEs in the adoption of accounting software is reviewed as well. The review of the selected literature has revealed that although there are numerous factors or challenges that influence the proper use and integration of accounting software, the studies all found certain key variables that stand out in relation to others. Furthermore, the most significant challenges faced seem to be affected by other variables such as the level of development of the economy or country or special circumstances such as the Covid-19 Pandemic. This means that this research which is carried out in less developed economy, and in a post-pandemic environment is necessary to reflect the actual circumstances of Omani SMEs implementing accounting software.

Keywords: *Cloud Accounting, SMEs, Covid-19 Pandemic.*

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Harnessing Artificial Intelligence for Enhanced Diagnostic Accuracy in Dentistry

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Abstract:

Artificial intelligence (AI) is the branch of computer science dedicated to building systems to perform tasks that normally require human intelligence. AI tries to solve problems and learn similar to humans. The field of AI has experienced phenomenal development and growth over the past two decades; with the latest developments in digitized data collection, machine learning, and computing infrastructure, AI applications are expanding rapidly, especially in areas that are thought to be reserved for experts in their fields. Artificial intelligence has started to take place rapidly in dental clinical applications. The use of artificial intelligence in dentistry has enormous potential to improve patient care and drive major advances in healthcare. AI in dentistry is being researched for various purposes, such as identifying anatomical and pathological structures, diagnosing diseases and predicting treatment results, and selecting materials to be used. Advances in AI offer healthcare benefits, such as reducing postoperative complications, improving quality of life, and reducing the number of unnecessary procedures. It can also play a great helping role for dentists in increasing the accuracy of diagnosis. This study aims to explain the current applications and future predictions of artificial intelligence in dentistry, which is one of the most current topics of recent times.

Keywords: *Artificial Intelligence, Diagnostic Accuracy, Dentistry, Machine Learning, Dental Imaging.*

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From Viewing to Doing: Engaging Undergraduates with AI and Wikis, in Moodle – LMS to Scaffold

"Teaching and Learning team-working in Research Proposal Writing"

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Abstract:

The Learning Management System (LMS) a popular one being Moodle, has many features that can be adopted to the task requirements. The Wiki feature is a user-friendly feature. This paper explores the utility of this feature from a sociological perspective as well as the technology affordance perspective that has evolved from there. The context of Research Proposal writing as a collaborative, team-working assignment for undergraduate learners is explored here in the learning of Scientific Research Methods as a course and how peer-scaffold is enabled.

Keywords: *Moodle, LMS, Research Proposal Writing, Team Working, Technology Affordance, Technology, Peer-Scaffold.*

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An Analysis of the Role and Impact of Reg-Tech Solutions' Implementation in Enhancing Regulatory Compliance at Private Banks in Oman

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Abstract:

The study focuses on analyzing the role and impact of RegTech solutions' implementation in enhancing regulatory compliance at private banks in Oman. The main objective of the research is to study and analyze the current regulatory compliance system, role, impact, and key factors influencing the successful integration of RegTech solutions at Private Banks in Oman. There has been no or very limited research on RegTech's implementation and its impact on Omani companies. This project employs a mixed-method approach, utilizing both quantitative and qualitative data, with research instruments comprising interviews and questionnaires. For the questionnaire survey, the population size is 112 (all employees) and the sample size is 87. Two structured interviews are conducted with the Head of Compliance and Head of IT. An online questionnaire is prepared and circulated to 87 employees of Private Banks in Oman. The collected data is analyzed utilizing various data analysis tools like SmartPLS, Microsoft Excel, and JASP. The types of statistical analysis utilized are descriptive, histogram, T-test, correlation, and ANOVA analyses. After conducting the qualitative and quantitative analysis, it was found that there exists a positive relationship between the implementation of RegTech and enhancing regulatory compliance procedures of the company. Existing or upcoming banks may benefit from this study and implement the recommended RegTech model in their companies. Researchers who wish to further investigate RegTech solutions can take great insights from the study. As there is limited research on RegTech in Oman, future researchers can take this research as a starting point and can go in-depth to find greater results and recommendations on the implementation of RegTech in Oman.

Keywords: *Implementation, Private banks in Oman, Regulatory Compliance, Regulatory Technology (RegTech).*

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