



ICTERLT 2026

2nd International Academic Conference on
Teaching Education and Recent Learning
Technologies

 **17th–18th June, 2026**

 **Jakarta, Indonesia**





2nd International Academic Conference on Teaching Education and Recent Learning Technologies (ICTERLT-2026), Jakarta, Indonesia

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Conference
Theme

Revolutionizing Learning: Technology, Creativity & the Future of Education

Preface

We are delighted to extend a warm welcome to all participants attending 2nd International Academic Conference on Teaching Education and Recent Learning Technologies (ICTERLT-2026) organized by IFERP Academy-Indonesia Society taking place on June 17th-18th, 2026 in Jakarta, Indonesia. 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 Teaching and Learning Technologies. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for ICTERLT-2026 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Teaching and Learning Technologies. 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 Innovation on Teaching and Learning Technologies 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 ICTERLT-2026.

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 ICTERLT 2026

The 2nd International Academic Conference on Teaching Education and Recent Learning Technologies (ICTERLT 2026) aims to advance innovation and collaboration at the intersection of teaching, educational science, and emerging learning technologies to shape the future of global education.

With a focus on transforming learning through technology and creativity, the conference brings together educators, researchers, EdTech innovators, and academic leaders to share insights, explore modern digital solutions, and promote impactful knowledge exchange.

"Revolutionizing Learning: Technology, Creativity, and the Future of Education" reflects ICTERLT 2026's commitment to transforming teaching and learning through innovative technologies, creative methodologies, and research-driven approaches. It emphasizes how digital tools, AI, and learning technologies can enhance learner engagement, while creativity and innovation empower educators to design meaningful, future-ready educational experiences. The theme also highlights the importance of inclusive, accessible, and sustainable learning environments that align with global educational needs and prepare learners for a rapidly evolving world.

Scopes of the Conference

ICTERLT 2026 covers a comprehensive range of themes focused on transforming education through innovative research, emerging technologies, and advanced learning methodologies, including:

Technology-Enhanced Teaching and Learning: Exploring digital tools, platforms, and systems that elevate teaching practices and learner engagement.

Educational research and learning technologies: Integrating research-driven methods with cutting-edge learning technologies for improved educational outcomes.

Curriculum innovation for future-ready learning: Designing modern curricula aligned with global demands, digital skills, and 21st-century competencies.

Human-technology interaction in learning environments: Advancing user-centered design, adaptive systems, and smart learning environments for optimized learner experiences.

Ethical, inclusive, and sustainable learning technologies: Ensuring responsible use of technology while promoting accessibility, equity, and sustainability in education.

Objectives of the Conference

The primary aim of ICTERLT 2026 is to advance global education, research, and learning technologies through interdisciplinary collaboration.

Fostering Interdisciplinary Collaboration: Connect experts from education, learning sciences, psychology, technology, and research to build integrated solutions for future-ready teaching and learning.

Bridge Research with Practice: Translate academic research into impactful classroom strategies, institutional practices, EdTech innovation, and policy frameworks.

Promote Innovation Aligned with the UN SDGs: Highlight forward-thinking learning technologies and educational models that contribute to the UN Sustainable Development Goals, especially inclusive and quality education.

Empower Emerging Educators & Scholars: Provide a global platform for students, teachers, and early-career researchers to develop skills, expand networks, and lead educational innovation.

About IFERP Academy

The IFERP Academy is a committed professional organization that advances engineering, science, and technology. IFERP anticipates a global scientific community brought together by digital innovation. This organization puts a great emphasis on promoting research activities, communicating the newest insights, and driving industrial trends.

IFERP has built strong networks throughout Asia, the Middle East, Europe, and countries such as Iraq, Malaysia, Australia, and more. They have incorporated networking, research support, publications, and worked in other scientific areas.

IFERP excels in organizing International Conferences that connect researchers worldwide. It holds important international webinars, publishes journals and publications that are indexed by Web of Science and SCOPUS, and provides thorough research assistance and guidance. Engaging in Youth Empowerment projects and encouraging Industry-Institute Interaction are key components of IFERP's goal. The organization is committed to enabling professionals through faculty advancement, skill development, and persistent research and publication initiatives.

What IFERP Does?

IFERP is committed to improving the professional experience by providing a world-class platform to professionals. Their dedication extends to the following activities:

Academic Resource Accessibility: They make academic resources and support available to aspiring scholars in both rural and urban locations.

Diverse Educational Program: They organize a wide range of educational events such as workshops, conferences, webinars, seminars, guest lectures, short-term training programs, and faculty development programs.

Drive Innovation: They work hard to foster curiosity and creativity, and stay up to date on the newest trends and advancements in the dynamic field of Engineering, Science, and Technology.

Knowledge Sharing and Collaboration: They believe in the strength of the exchange of knowledge and actively collaborate with institutions, organizations, and associations to contribute to our shared objective of a better future.

Publication & Recognition: They also provide opportunities for research articles to be published in reputable journals and actively promote and encourage transdisciplinary research activities.

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.

Value

IFERP values the restoration of high-level technological research, learning, collaboration, resource sharing & community-building traditions.

Mission

To serve as the foundation for all technological progress and advancement activities around the world.

From Director, IFERP



**Mr. Siddh Kumar
Chhajer**

Managing Director & Founder,
IFERP, Technoarete Group,
India

On behalf of Institute For Educational Research and Publications (IFERP) & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the 2nd International Academic Conference on Teaching Education and Recent Learning Technologies (ICTERLT-2026) is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries of Teaching and Learning Technologies.

This conference creates solutions in different ways and to share innovative ideas in Teaching and Learning Technologies. ICTERLT-2026 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.

ICTERLT-2026 will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Nursing & Medical fields from all over the world. ICTERLT-2026 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the Teaching and Learning Technologies.

From CEO, IFERP



**Mr. Rudra Bhanu
Satpathy**

CEO & Founder,
IFERP, Technoarete Group,
India

IFERP is hosting the 2nd International Academic Conference on Teaching Education and Recent Learning Technologies (ICTERLT-2026) this year in month of June, 2026.

The main objective of ICTERLT-2026 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.

About Keynote Speaker



Dr. Baihaqi
Siregar

Universitas Sumatera Utara
Indonesia

Dr. Baihaqi Siregar is an academic and researcher in the field of computer science and information technology. His research interests include emerging computing technologies and applied informatics. He has contributed to several peer-reviewed journals and international conferences and is actively involved in academic research and scholarly collaborations.

About Keynote Speaker



**Dr. Ir. Wayan
Suparta**

Naresuan University,
Thailand

Ir. Wayan Suparta, Ph.D. is a Professor of Electrical and Computer Engineering at the Faculty of Engineering, Naresuan University, Thailand. He received his Doctorate (Ph.D.) in Electrical, Electronics, and Systems Engineering from Universiti Kebangsaan Malaysia (UKM), and later earned a Professional Engineer degree (Ir.) in Electrical Engineering with summa cum laude honors from the Indonesian Institute of Technology (ITI). Following his Ph.D., he served at UKM as a Postdoctoral Fellow, Senior Lecturer, and Associate Professor from 2008 to 2017. Prof. Suparta has played a leading role in advancing international research collaboration and scholarly dissemination, including initiating and organizing major international conferences such as IconSpace (2009), STACLIM (2014), CUSME (2020), CONSER (2022), and NUSTARC (2025). His teaching and research interests span polar research, communication systems, digital signal processing, intelligent and autonomous systems, machine learning, geospatial technology, and DIY drone development, with particular emphasis on GPS/GNSS and IoT-based systems. As of 2025, he has authored over 250 indexed publications and 10 reference books, and is actively involved in academic publishing as an editor-in-chief, editorial board member, reviewer for reputable journals, and assessor for international research grants, as well as serving as a visiting professor and lecturer at several universities in Southeast Asia (2017–2024).

About Keynote Speaker



**Dr. Rahmat
Budiarto**

Naresuan University,
Thailand

Rahmat Budiarto, received B.Sc. degree in Mathematics from Bandung Institute of Technology, Indonesia in 1986, Master of Engineering and Doctor of Engineering. in Computer Science from Nagoya Institute of Technology, Japan in 1995 and 1998, respectively. Currently, he is a full professor at Dept. of Computer Science, Al-Baha University, Saudi Arabia. He received his full professorship from Universiti Sains Malaysia, Malaysia in 2011. His research interests include intelligent systems, brain modeling, IPv6, network security, Wireless sensor networks, and MANETs. He is involved in curriculum development in computing at undergraduate as well as postgraduate programs. He was chairing, APAN Security Working Group (2006–2009), established IPv6 research center (NAv6 Center), at Universiti Sains Malaysia (USM), in 2005, then appointed as the Deputy of the center (2005–2009).

About Keynote Speaker



**Dr. Jacob F. N.
Dethan**

Rector
Universitas Sugeng Hartono
Indonesia

Assoc. Prof. Jacob F. N. Dethan, S.T, M.Eng.Sc, Ph.D is the rector of Universitas Sugeng Hartono. He is an accomplished academic and innovative leader in higher education, widely recognized for his commitment to advancing international collaboration, academic quality, and institutional development in Indonesia. With a strong foundation in both teaching and academic management, he has consistently demonstrated a forward-thinking approach to curriculum design, research strategy, and global engagement. Assoc. Prof. Dethan has played a central role in establishing international partnerships that connect Indonesian universities with institutions around the world. His efforts have expanded opportunities for student and faculty exchanges, joint research, and culturally enriching academic programs. He believes that higher education should empower individuals to become global citizens while remaining grounded in local values. Known for his integrity, vision, and collaborative spirit, Assoc. Prof. Dethan is passionate about preparing the next generation of leaders who can address global challenges with creativity and compassion. He continues to inspire colleagues and students alike with his belief that meaningful education is a bridge to a better future. His leadership stands as a model of how Indonesian higher education can thrive in an interconnected world—rooted in excellence, driven by purpose, and open to meaningful collaboration across borders.

About Session Speaker



**Ms. Sujana
Shafi**

Universiti Malaysia Terengganu
Malaysia

Sujana Shafi is a Lecturer in Marketing at Universiti Malaysia Terengganu (Malaysia). She teaches and researches in the areas of consumer behaviour, digital marketing, and sustainability, with a particular focus on online purchasing and eco-conscious consumption. Her academic work integrates research-driven insights into teaching and contributes to contemporary discussions on sustainable and technology-enabled marketing.

About Session Speaker



**Dr. Koushick
Venkatesh**

Vel Tech Rangarajan Dr. Sagunthala R&D
Institute of Science and Technology
India

Dr. Koushick Venkatesh received his B.E degree (ECE) from Anna University Tiruchirappalli in 2011. He received his Post graduate Diploma in VLSI Design from Annamalai University Chidambaram in 2011. He received his M.E. degree (Communication Systems) from Anna University Chennai in 2014. He received his Ph.D., degree (Communication Systems – Information Technology (Interdisciplinary)) in the field of RF & Microwave Antennas from Manonmaniam Sundaranar University, Tirunelveli in 2022. From 2011 to 2012 he worked as lecturer and from June 2014 to May 2025 he worked as Assistant Professor in Electronics and Communication Engineering. Currently, he is working as Associate Professor in the Department of Electronics and Communication Engineering at Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Deemed to be University, Avadi, Chennai. He published 18 papers in International Journals which is indexed by UGC CARE, Scopus, Web of Science and 13 papers in International conference organized by IEEE and Web of Science. He received best presenter award from University of Perlis, Malaysia and best paper award from Ramco Institute of Technology, Virudhunagar, Tamilnadu sponsored by AICTE, New Delhi. He published 5 Indian patents, 1 German patent and 5 book chapters. He serving as member educationist in Sigma CBSE School, Tiruchirappalli. He is an Admin cum Tech Guru for Vel Tech AICTE IDEA Lab. He is a board of studies member in Indra Ganesan College of Engineering, Tiruchirappalli. He is an active member in IEEE, ISTE, IAENG and BES professional bodies. He is a Reviewer in ACES, IEEE Conferences and reputed Journals. His research areas include Antennas, RF and Microwaves, RADAR and VLSI.

About Session Speaker



Dr. Ridwan
Sanjaya

Soegijapranata Catholic University,
Indonesia

Ridwan Sanjaya is a full Professor in Information Systems of Soegijapranata Catholic University, Semarang, Indonesia. He joined the SCU faculty in 2002, initially serving as a lecturer. He obtained his MSc in Internet and E-Commerce Technology and PhD in Computer Information Systems from the Graduate School of Information Technology, Assumption University, Bangkok, Thailand (in 2006 and 2011, respectively). He has expertise in utilizing technology to transform educational content for students, to align with the business, and to empower people.

About Session Speaker



**Dr. Sakinah Ali
Pitchay**

Universiti Sains Islam Malaysia
Malaysia

Dr Sakinah Ali Pitchay is a visionary leader in artificial intelligence, information security, and human capital development. A PhD graduate in Computer Science from the University of Birmingham, UK. She is a recognized Technologist Specialist (Ts.) by the Malaysian Board of Technology and an influential voice in the global ICT landscape. Currently serving as the Director of the Centre of Soft Skills Development for the Co-Curriculum Centre, Dr Sakinah bridges the gap between technical excellence and graduate employability. Her leadership journey includes nearly a decade as Head of Programme and Deputy Dean, complemented by her prestigious recognition with the Excellence Service Medal from the Malaysian Ministry of Higher Education and the Distinguished Conduct Medal (Darjah Pekerti Terpilih) state award in 2025. A seasoned international invited speaker with various keynote engagements across the USA, Japan, Indonesia and Pakistan. Dr. Sakinah is a prolific innovator holding 63 medals and 9 copyrights, including the OIC-CERT (Computer Emergency Response Team) Global Cybersecurity Award in the UAE, and she further extends her expertise as a dedicated mentor and community advocate through the Cyber Hasanat initiative across Taiwan, Indonesia, and Vietnam. Among the awards are the Best Innovation Award for her research grant project in the Innovation Bank Challenge, the Innovation and Mentoring Figures Graduate Employability Personality Award, and the Creativity & Innovation Award at the university level. She continues to shape the future of cybersecurity and student success through a rare blend of technical mastery, creative innovation, and a profound commitment to social contribution.

About Session Speaker



**Dr. Munadhil Abdul
Muqsith**

Associate Researcher
The National Research and Innovation
Agency of the Republic of Indonesia
(BRIN), Indonesia

Dr Sakinah Ali Pitchay is a visionary leader in artificial intelligence, information security, and human capital development. A PhD graduate in Computer Science from the University of Birmingham, UK. She is a recognized Technologist Specialist (Ts.) by the Malaysian Board of Technology and an influential voice in the global ICT landscape. Currently serving as the Director of the Centre of Soft Skills Development for the Co-Curriculum Centre, Dr Sakinah bridges the gap between technical excellence and graduate employability. Her leadership journey includes nearly a decade as Head of Programme and Deputy Dean, complemented by her prestigious recognition with the Excellence Service Medal from the Malaysian Ministry of Higher Education and the Distinguished Conduct Medal (Darjah Pekerti Terpilih) state award in 2025. A seasoned international invited speaker with various keynote engagements across the USA, Japan, Indonesia and Pakistan. Dr. Sakinah is a prolific innovator holding 63 medals and 9 copyrights, including the OIC-CERT (Computer Emergency Response Team) Global Cybersecurity Award in the UAE, and she further extends her expertise as a dedicated mentor and community advocate through the Cyber Hasanat initiative across Taiwan, Indonesia, and Vietnam. Among the awards are the Best Innovation Award for her research grant project in the Innovation Bank Challenge, the Innovation and Mentoring Figures Graduate Employability Personality Award, and the Creativity & Innovation Award at the university level. She continues to shape the future of cybersecurity and student success through a rare blend of technical mastery, creative innovation, and a profound commitment to social contribution.

About Session Chairs



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Sharma**

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Mitigating Hallucinations with MCP Framework for Agentic Data Retrieval in Clinical Trial Recruitment

Leeza

AIIT, Amity University, Noida, Uttar Pradesh, India

Deepak Kumar

AIIT, Amity University, Noida, Uttar Pradesh, India

Abstract:

Patient recruitment is one of the most challenging aspects of conducting clinical trials. The traditional methods of identifying eligible candidates from large patient pools rely either on manual review or on a high-effort and rigid approach involving rule-based SQL scripts, both of which are time consuming and error-prone. In recent years, artificial intelligence (AI) tools have increasingly been adopted to improve the efficiency of manual tasks and to assist in the generation of such database queries. However, the hallucinations within LLMs and lack of schema awareness results in inaccurate patient matching and unreliable outputs. This paper demonstrates a framework which makes use of an AI agent integrated with Model Context Protocol (MCP) to interface with a structured database. The architecture enables the agent to dynamically explore the database schema and retrieve patient vitals, medication histories, and clinical notes in real-time. This paper also outlines comparative evaluation of multiple AI agents, all tested on the same dataset for an identical set of task specifications via prompts, with performance measured by the correctness of their responses.

Index Terms:

Clinical Trial Eligibility, Agentic AI, Model Context Protocol (MCP), Postgres Database

The Interface is the Message: How UX Design Reconstructs Human Attention and Emotion

Mehak Johri

Animation Department, Dr. D.Y. Patil School of Design, Maharashtra, India

Dr. Siddhant Vasantrao Wadmare

Vice Dean/ HOD, Animation Department, Dr. D.Y. Patil School of Design, Maharashtra, India

Abstract:

Digital media platforms have gone beyond content distribution systems into complex psychological environments which is structured by interface design. Drawing from Marshall McLuhan's proposition that "the medium is the message," this study argues that in contemporary digital ecosystems, the interface functions as the primary message.

User Experience (UX) design shows through infinite scrolling, notification systems, color psychology, autoplay features, and algorithmic feedback loops which reconstructs patterns of human attention and emotional response.

This paper examines how the interface architecture influences the cognitive engagement, emotional dependency, and behavioural interactions. This study explores how design elements work as psychological tools by examining platforms like Instagram, YouTube, Netflix, Prime video, and TikTok.

Through qualitative analysis and theoretical grounding in attention economy and behavioural psychology, the research identifies the interface which acts as a powerful agent that reshapes user perception, emotional regulation, and digital habit formation. The findings suggest that UX design is not neutral but that it operates as an invisible architecture of influence on users which demanding ethical consideration and critical awareness in media production and consumption.

Index Terms:

UX Design, Interface Architecture, Attention Economy, Emotional Design, Behavioural Conditioning, Infinite Scroll, Algorithmic Media

PT Barito Pacific Tbk (BRPT) Stock Prices Analysis Using Long Short-Term Memory (LSTM) Model With Different Configuration

Dennis Emir Adrian

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Ade Putera Kemala

Computer Science Department, School of Computer Science, Bina Nusantara University, Jakarta, Indonesia

Muhammad Kaisar Novrenza

Data Science Program Computer Science Department, School of Computer Science Bina Nusantara University Jakarta, Indonesia

Abstract:

This research examines the stock price forecasting of PT Barito Pacific Tbk (BRPT) utilizing Long Short-Term Memory (LSTM) networks with three distinct architectural variations. The historical stock price data from January 2023 to December 2025 was obtained from Investing.com Indonesia, underwent a Min-Max normalization, and was formatted into 60-day sliding window sequences. Three LSTM variations were assessed. Configuration 1 (Simple LSTM) had one layer containing 50 units, Configuration 2 (Stacked LSTM) contained two layers with 100 and 50 units, respectively, and Configuration 3 (Bidirectional LSTM) had one bidirectional layer with 100 units and one unidirectional layer with 50 units. Each of the models was constructed with the Adam optimizer, and a learning rate of 0.001 and Mean Squared Error (MSE) was the loss function for 60 training epochs. The constructed models were assessed based on the MSE, RMSE, and MAE. The findings indicated that Configuration 3 (Bidirectional LSTM) was the superior configuration, as it generated the least MSE (5840.27), RMSE (76.42), and MAE (47.38) in the comparison to the Simple LSTM and the stacked LSTM, with MSE (6649.17), RMSE (81.54), MAE (49.43), and MSE (6100.78), RMSE (78.10), and MAE (49.47), respectively. The results indicated that in an emerging market such as Indonesia, the use of Bidirectional LSTMs for financial time series made the predictions more accurate as the volatile financial time series require the use of both the past and the future.

Index Terms:

LSTM, Bidirectional LSTM, Stacked LSTM, Stock Price Prediction, BRPT, Time Series Forecasting, Deep Learning, Indonesian Stock Market

Results of the Method for Measuring the Nasal Valve Area

Djuraev J.A.

Tashkent State Medical University, Uzbekistan

Norjigitov F.N.

Tashkent State Medical University, Uzbekistan

Abstract:

The relevance of the study is due to the high prevalence of nasal breathing disorders associated with narrowing of the internal nasal valve, as well as the lack of unified objective criteria for quantitative assessment of anatomical changes in this area after surgical treatment. In clinical practice, the effectiveness of internal nasal valve correction is often assessed based on subjective and functional indicators, which emphasizes the need to implement reproducible morphometric analysis methods. This study was conducted between 2023 and 2025 at the ENT department of the multidisciplinary clinic at Tashkent State Medical University and aimed to assess the effectiveness of a developed method for measuring the area of the internal nasal valve during its surgical correction by endoscopic and classical approaches. The study included 102 patients with clinical manifestations of nasal breathing disorders due to narrowing of the internal nasal valve. The first group comprised 52 patients who underwent endoscopic narrowing removal, while the second group included 50 patients who underwent classical surgical correction. For the objective quantitative assessment of anatomical changes, an original method for measuring the cross-sectional area of the internal nasal valve, based on the analysis of endoscopic images using specialized software, was employed. Assessment was carried out in the preoperative period, intraoperatively, and at various stages of postoperative observation. The obtained results demonstrated a significant increase in the area of the internal nasal valve after surgical intervention in both groups of patients, with subsequent stabilization of the indicators. No significant differences were found in the dynamics of changes between endoscopic and classical methods, which indicates the comparable effectiveness of these surgical approaches and the high informativeness of the proposed assessment method.

Index Terms:

Internal Nasal Valve, Morphometry, Nasal Breathing

Empowering Social Workers to Support Deaf/Mute Individuals across Generations: A Contemporary Psychological and Social Work Perspective with Special Reference to the Indian Context and the RPWD Act, 2016

Shaik Sameer

Department of Social Work, Vikrant University, Gwalior, India

Dr. Mamta Meena

Department of Social Work, Vikrant University, Gwalior, India

Abstract:

The challenges faced by deaf and mute individuals extend beyond communication barriers, encompassing social, emotional, and psychological dimensions that vary across generations. In the Indian context, these challenges are further compounded by systemic inequalities, cultural stigma, inadequate implementation of disability legislation, and limited awareness about the rights of persons with disabilities (PwDs). This study explores the multifaceted role of social workers in empowering deaf/mute individuals by integrating the Indian socio-cultural milieu.

Special emphasis is placed on understanding generational differences in coping mechanisms, access to resources, and social integration, while identifying strategies to enhance self-efficacy, social participation, and mental well-being. The study critically analyzes the Rights of Persons with Disabilities (RPWD) Act, 2016, and its practical implications for social work practice in India. Through a comprehensive review of current interventions, case studies, empirical evidence, and analysis of Indian national disability data, the research highlights the significance of tailored psychosocial support, advocacy, and community-based programs that address the unique needs of deaf/mute populations across age groups.

The findings underscore the importance of equipping social workers with specialized skills, cultural competence, and psychological insight to facilitate intergenerational empowerment, promote inclusive social practices, and improve quality of life. This study contributes to the discourse on inclusive social work practices and offers practical recommendations for policy and program development aimed at bridging generational gaps and promoting holistic, rights-based support for deaf/mute individuals in contemporary India.

Index Terms:

Inclusive Practices, Mental Well-Being, Advocacy, RPWD Act 2016, Deaf Culture, Psychosocial Empowerment, Intergenerational Support, India

A Hybrid Generative AI and Deep Vision Framework for Multi-Class Solar Panel Fault Classification with Real-Time Analysis

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Abstract:

Solar energy has emerged as a sustainable and scalable solution for modern power generation, yet the efficiency of photovoltaic panels is frequently reduced by environmental contamination and structural faults. Conditions such as dust accumulation, bird droppings, snow coverage, and physical or electrical damage can significantly impact energy output if not detected early. This study presents a hybrid Generative AI and deep vision framework for multi-class solar panel fault classification and real-time analysis using image-based data. The proposed approach integrates VGG19 and Vision Transformer models to capture both local texture features and global contextual patterns for accurate classification across six fault categories. Generative AI techniques based on synthetic data augmentation are employed to address dataset imbalance and improve model generalization. In addition, a YOLO-based detection model is incorporated to enable fast and efficient real-time fault localization. Performance evaluation using accuracy, precision, recall, and inference time demonstrates improved robustness and scalability compared to conventional methods. The framework provides an automated, efficient, and practical solution for intelligent solar panel monitoring and maintenance.

Index Terms:

Solar Energy, Fault Classification, Deep Learning, Generative AI, Vision Transformer, YOLO, Real-Time Analysis

Developing AI Applications For Parent Communication at Umair Bin Abi Waqqas First Cycle School

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Abstract:

In recent years, educational environments have witnessed rapid digital transformations that have significantly reshaped educational communication between schools and families. Artificial Intelligence (AI) technologies have become one of the modern foundations for enhancing communication quality, improving response speed, and strengthening educational partnerships. Accordingly, this study aimed to evaluate the impact of the AI-based communication program "Tawasuli Sir Saadati" on improving communication between teachers and parents at Umair Bin Abi Waqqas School. The study also sought to examine the effectiveness of the program in enhancing educational interaction, increasing user satisfaction, and facilitating the exchange of educational information with greater speed, accuracy, and flexibility.

Furthermore, the study aimed to identify the effectiveness of communication methods related to transparency, participation, response speed, and the quality of content delivered through the program. It also explored the attitudes of parents and teachers toward the use of smart communication tools based on Telegram applications and automated response systems.

The study adopted the action research approach, as it focuses on addressing a real educational problem through direct practical intervention. A smart communication program based on a Telegram chatbot was designed and implemented to improve the quality of communication between school and family and to support students' academic and behavioral follow-up.

The study sample consisted of a group of parents and teachers using the program at Umair Bin Abi Waqqas School during the third semester of the academic year 2024–2025. The sample included (376) participants, comprising (354) parents and (22) teachers, selected through purposive and stratified sampling methods in accordance with the nature and objectives of the study.

To achieve the study objectives, an electronic questionnaire was developed covering several dimensions, including communication effectiveness, response speed, content quality, feedback, and technical and organizational challenges. Data were analyzed using SPSS through descriptive and inferential statistical methods, including means, standard deviations, T-tests, and One-Way ANOVA.

The findings revealed that the program significantly contributed to enhancing communication between the school and parents, improving response speed, and increasing user satisfaction with smart digital communication mechanisms. The results also demonstrated a noticeable increase in interaction and continuous follow-up, particularly regarding instant notifications and academic and behavioral reports. In addition, parents and teachers showed highly positive attitudes toward using the program due to its ease, flexibility, and effectiveness in reducing teachers' communication workload.

The study further indicated that there were no statistically significant differences in participants' attitudes attributable to certain demographic variables, while differences related to educational level and digital literacy were identified, highlighting the importance of digital awareness in maximizing the benefits of smart communication systems.

Based on the findings, the study recommended expanding the use of AI applications in public schools, developing smart communication platforms that support the Arabic language and local culture, and providing continuous training for teachers and parents on the effective use of these systems to enhance school life quality and establish more sustainable and effective educational partnerships.

Index Terms:

Artificial Intelligence, Educational Communication, Telegram, Automated Response Systems, Parents, Smart Schools, Digital Communication, School-Family Partnership.

Creative Technology & UX in Indian Animation

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Abstract:

This paper examines children's perceptions of contemporary India through user experience (UX), digital design and animated media. Digital technologies and visual media systems have developed rapidly, and animation has emerged as an effective tool for the children's understanding of things that they experience in mind as well as in social life. Despite advances in technology, many animated media productions in India continue to be based on mythological narratives and rural contexts. These models are effective in preserving cultures and arousing emotional involvement, but they do not reflect a contemporary America, which is extremely urbanised, technologically advanced and digitally connected. This gap between representations leads to many questions, the most fundamental of which, concerns the effect of visual mediated space on children's cosmopolitan understandings of spatial, social and technological contexts. This study uses a user-focused analytical approach to study the animated films and series produced from 2005 to 2023. It includes qualitative data from surveys and focus group conversations with kids aged 6 to 16. It analyzes how design elements like visual environments, characters, narratives, and interaction patterns influence engagement, memory, and the construction of perceptions. The findings demonstrate that being in the same few places repeatedly can inhibit people from building mental maps of the world around them. Visual environments that are more varied, dynamic, and contextual foster curiosity, critical thinking, and engagement. This paper proposes a design-centric framework that integrates cultural narratives with contemporary digital environments. Progress in visual design, media technologies, and user experience methodologies illustrates the potential for animated content to evolve into a more inclusive and equitable medium for fostering children's cognitive development.

Index Terms:

User Experience (UX); Animated Media; Children's Perception; Digital Environments; Visual Representation

Continuous Monitoring and Analysis of Power Quality Parameters in Solar PV System Using ESP32

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Abstract:

The solar PV systems have become more popular as the world shifts towards using renewable energy. However, keeping the power quality consistent is difficult because of factors like changing sunlight, dust accumulation, and temperature fluctuation. This paper explains how a real time monitoring system was created to check the power quality in solar PV set-up using an ESP32 microcontroller. The system tracks voltage, current, light levels and dust levels, showing these values on a 16*2 LCD display. It uses various sensors such as the ACS712 for measuring current, a voltage sensor, an LDR collects and process this data and it can also send the information to an IOT dashboard for real time viewing. This experiment showed that dust and light levels have a big effect on how much power the PV systems produces and how efficient it is overall. The system helps find and reduces losses which makes the solar power generation more reliable and of better quality.

Index Terms:

ESP32, Solar PV, Power Quality, IoT, Dust Sensor, Voltage Sensor, Renewable Energy

Hybrid Range Based Underwater Localisation

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Abstract:

Underwater wireless sensor networks perform a critical task in many areas, including environmental observation, resource tracking, and navigation of an autonomous underwater vessel. It is still extremely difficult to accurately perform underwater localization due to some unique problems with signal propagation, such as multipath effects, severe attenuation, and interference with noise. This work proposes a hybrid localization technique based on RSSI and TDOA measurements fused by nonlinear optimization, whose results are further refined by a 2D Kalman filter. MATLAB simulations are designed to simulate underwater acoustic conditions with additional noise and uncertainties. It indicates that the Kalman-filtered hybrid method significantly reduces localization errors compared to the unfiltered hybrid approach and the traditional DV-Hop algorithm. The study concludes with suggestions for using machine learning techniques to further improve adaptability and energy efficiency.

Index Terms:

Kalman Filter, RSSI, Underwater Localisation, TDOA

Integrating SMART Technologies in Foreign Language Education: A Quantitative Study in Uzbekistan

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Abstract:

We investigated English teaching quality at a regional language institute in Uzbekistan (110 km from the center). A total of 127 participants took part in our survey, including 103 university students, 13 university teachers and 11 school teachers. The main goal of this study is to analyze the quality of lessons, technical and pedagogical skills, using various types of questions, in an education system where smartphone bans are in place, while the institution actively expands its digital infrastructure. Currently, our technological setup includes 4 interactive e-boards, 9 SMART TVs, 26 tablets, and 58 computers (40 in classroom and 18 in the library) to satisfy students and gather their opinions on necessary additions. To achieve the research objectives, we adopted a quantitative approach by conducting a structured survey. Data showed a strong consensus: SMART technologies are more effective, though 8.7% still prefer traditional ways. Ultimately, we aim for digital progress without losing our native language and national identity.

Learning Analytics as a Tool for Developing Teachers' Differentiation Skills in Higher Education

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Abstract:

Due to the rapid development of digital educational technologies and online learning environments, learning analytics is considered to be an effective tool for teaching a foreign language, especially in higher education, as it reveals data-driven insights about students' learning needs. This method enables educators to collect, analyze, and interpret data related to students' learning behaviors, academic performance, and engagement. Moreover, it fosters teachers' professional development and help monitor the effectiveness of their pedagogical techniques. This paper studies the potential of learning analytics in developing teachers' differentiation skills in FLE. The research provides how learning analytics can support personalized trajectories and enhance adaptive learning experiences. The findings demonstrate that the integration of learning analytics into pedagogical practice contributes to the development of critical thinking and digital competences of a teacher. A mixed-methods approach was employed involving university students enrolled in foreign language courses. Data were collected through learning management systems, academic assessments, classroom observations, and student surveys. The findings suggest that learning analytics contributes to more effective personalization of foreign language instruction, improves student engagement and motivation. However, teachers need to develop their professional skills in interpreting visualizations of learning analytics to evaluate students' knowledge, thus enabling data-driven decision-making as a pedagogical model. Finally, the author suggests practical recommendations for educators in higher education for differentiated instruction in ELT, therefore achieving simultaneous improvements in professional development and teaching quality.

Index Terms:

Learning Analytics, English Language Teaching (ELT), Higher Education, Teachers' Professional Development, Personalization of Foreign Language Instruction, Data-Driven Decision-Making, Pedagogical Model, Differentiated Instruction

Heart Attack Prediction Using Semi-Supervised Classification with Pairwise Constraints

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Abstract:

Predicting heart attacks is a vital medical process where labeled clinical data are not only rare but costly and skewed towards certain risk categories. Semi-supervised learning (SSL) is a good solution to this problem as it can use a large amount of unlabeled patient data. But, regular SSL methods only use the few labels that are provided and do not take into consideration the structural information that can be obtained from the pairwise relationships between patient samples. This paper presents a semi-supervised classification model which uses pairwise constraints i.e. Must-Link (ML) and Cannot-Link (CL) constraints in the prediction modelling for estimating cardiac risk. ML constraints indicate that two patients should be in the same risk category, while CL constraints indicate that they should be in different risk categories. The introduced method has two steps. In the beginning, a base classifier is trained on the labelled subset of patient records from the available data. In the second step, ML and CL constraints are used to alter the decision boundaries by changing the labels predicted for the unlabelled instances in a mutually consistent way. The model, by at the same time, propagating labels over constraint-connected samples, attains more stable cluster structures and thus it is able to greatly increase decision consistency. Our method is different from normal constrained clustering or graph-based transductive SSL in that it is an inductive approach and hence it can make predictions on the new patient data, and at the same time, it can still use pairwise relational constraints. An extensive range of experiments has been conducted by us using clinical data that include demographic features, laboratory biomarkers, ECG-derived features, and symptoms. We find that our proposed constrained SSL technique is always better than standard supervised classifiers (e.g., Logistic Regression, Random Forest), classical constrained clustering, and both inductive and transductive SSL baselines. Pairwise constraints result in significantly better generalization, particularly in low-label regimes, as evidenced by ROC-AUC, F1-score, calibration error, and confusion matrices. The findings suggest that medical relational constraints, such as patient trajectories' similarities or risk profiles' incompatibilities, which are naturally there in medical environments, can be utilized to develop prediction models for heart attack that are more accurate, trustworthy, and of great clinical value.

Index Terms:

Semi-Supervised Learning, Pairwise Constraints, Graph-Based Learning, Heart Disease Prediction, Medical Data Classification

Nutrition Assessment in Children using Machine Learning and Image Processing

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Abstract:

Malnutrition in children remains a considerable global health challenge, particularly in developing and resource-limited areas where early identification and intervention are often inadequate. This study investigates an innovative methodology for nutritional assessment in children by combining anthropometric data with sophisticated image analysis. The proposed system combines manual input—such as age, gender, height, and weight—with automated analysis of child images to identify early signs of nutritional deficiencies. This hybrid method enables the prediction of malnutrition risks with increased accuracy and minimal reliance on medical infrastructure. Designed with scalability and usability in mind, the system is especially suitable for deployment in rural clinics, mobile health units, and underserved communities. By empowering frontline health workers with an intelligent and accessible tool, this research contributes to more effective, data-driven, and proactive nutritional monitoring. The interdisciplinary nature of this work, drawing from artificial intelligence, public health, and clinical nutrition, positions it as a promising solution to bridge gaps in current child health surveillance systems.

Index Terms:

Malnutrition, Anthropometric Analysis, Machine Learning, Child Nutrition, Image Processing, Public Health, Mobile Health Technology, Nutritional Analysis, Nutrition

An Interactive RAG-Enhanced Generative AI Framework for Molecular Design

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Abstract:

The vast size of chemical space presents a significant challenge in modern drug discovery, making efficient molecular design a critical research problem [5], [17]. While generative artificial intelligence models have shown promise in de novo molecule generation, many approaches suffer from limited chemical validity and insufficient utilization of existing chemical knowledge [1], [10]. To address these limitations, this paper presents an interactive Retrieval-Augmented Generation (RAG) enhanced generative AI framework for molecular design [18], [19].

The proposed framework integrates large-scale molecular knowledge retrieval with deep generative modeling to guide molecule synthesis [13]. A curated dataset of 196,627 PubChem molecules is used to construct a molecular knowledge base, where embeddings are indexed using FAISS to enable efficient similarity-based retrieval [12]. Retrieved molecules provide contextual seeds that improve the relevance and stability of the generative process [18]. To ensure chemically valid generation, molecular structures are represented using Self-Referencing Embedded Strings (SELFIES) [1].

Our framework evaluates LSTM, GRU, and Transformer architectures using RDKit-based metrics like QED, novelty, and Lipinski compliance. The SELFIES-LSTM model achieved 100% molecular validity with high diversity, all accessible through an interactive platform for real-time analysis.

Index Terms:

Retrieval-Augmented Generation, Molecular Design, Generative Artificial Intelligence, Drug Discovery, SELFIES Representation, FAISS Vector Database, Deep Learning, PubChem Dataset, Cheminformatics

Early Prediction of Alzheimer's Disease using Convolutional Neural Network - Review Paper

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Abstract:

Alzheimer's Disease (AD) is a progressive condition that affects the brain, and early and accurate diagnosis is essential for timely treatment. In recent years, deep learning techniques, particularly Convolutional Neural Networks (CNNs), have shown great promise in analyzing brain MRI scans for early detection of AD. This paper presents a review of recent approaches using CNNs for predicting Alzheimer's disease before symptoms become severe. A thorough search was conducted across major scientific databases for studies published between 2018 and 2025. The reviewed methods were assessed based on the data used, the structure of the model, performance metrics, and their applicability in real-world clinical settings. The analysis reveals that advanced CNN models, such as 3D CNNs and transfer learning techniques, can achieve high accuracy, ranging from 85% to 97%. However, several challenges remain, including the lack of diverse data, class imbalances, high computational demands, and the difficulty in understanding how these models make decisions. This study outlines current trends, identifies existing problems, and proposes directions for future research to develop more reliable and effective.

Index Terms:

Alzheimer's disease, CNN, Deep AI systems for diagnosing Alzheimer's Disease. Learning, MRI Imaging, Early Diagnosis, Medical Image Classification

Experimental Investigation on Light weight Geopolymer Concrete blocks with GGBS and Rice Husk Ash

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Abstract:

In this study, the objective is to synthesize LWGPC with the use of eco-friendly materials GGBS and RHA in place of OPC with better strength and durability properties. Materials & Methods: Geopolymers made of GGBS and RHA were used as binder material activated by NaOH solution and sodium silicate. In the concrete mix using LWGPC using cubes (150mm x 150mm x 150mm), prisms (100mm x 100mm x 500mm) and concrete blocks (200mm x 100mm x 1000mm) were cast and then cured in water with the ratio of NaOH to Na_2SiO_3 of 2.5:1 and a water-to-binder ratio of 0.40. Light weight aggregates were added to lower density while CFPR was used as reinforcement to improve flexural properties. Results: Improved compressive strength, tensile strength, and flexural strength in addition to lower density have been realized from the proposed LWGPC. Conclusion: The present study demonstrates a sustainable and effective LWGPC synthesized from geopolymer using environmentally friendly materials GGBS and RHA. Excellent mechanical properties and structural efficiency have been attained with improved density.

Index Terms:

Geopolymer Concrete, GGBS, RHA, LWGPC, Binder

Other Learning Environments through STEAM+H

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Abstract:

Addressing today's complex problems requires a convergence of disciplines that contribute to the creation of innovative and sustainable solutions. It also requires recognizing that learning opportunities exist in diverse settings and that technology has facilitated knowledge acquisition like never before. The STEAM-PBL methodology allows for the development of technological, procedural, and soft skills.

Academic events such as Bootcamps, Science Fairs, and Hackathons take place in various environments, not necessarily requiring classrooms. This creates alternative learning spaces, enhancing knowledge and skills development. Some of these learning opportunities that extend beyond the classroom utilize technology to reach more participants, providing the opportunity to disseminate knowledge by connecting students online through simulation processes. These events, being only a few hours long, also offer the opportunity to be repeated, or, as in the case of Science Fairs, activities are designed that last one to two hours, providing access to knowledge for hundreds of people in one day.

The Impact of an AI-Based Communication Program on School-Family Partnerships in UAE Primary Education: An Action Research Study

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Abstract:

This research investigates the effectiveness of an AI-driven smart communication program in enhancing the quality of school-family partnerships at Umair Bin Abi Waqqas School in Kalba, UAE. Using an action research design, 376 participants (354 parents and 22 teachers) engaged with a Telegram-based chatbot throughout the third term of the 2024-2025 academic year. Data were collected through a validated online questionnaire covering transparency, partnership, and communication tools, and analyzed using SPSS (T-test, ANOVA). Results indicated significant improvements in communication clarity, parental engagement, and satisfaction, with no statistically significant differences based on gender or grade level.

Qualitative feedback highlighted increased responsiveness and reduced teacher workload, along with challenges related to digital literacy and message overload. The study recommends systematic adoption of AI communication tools, targeted training for all stakeholders, and further research into long-term educational impacts.

Index Terms:

Artificial Intelligence, School-Family Communication, Parental Engagement, UAE, Action Research, Digital Education

Developing Artificial Intelligence Applications for Parent-School Communication at Umair Bin Abi Waqqas Primary School – Cycle One

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Abstract:

This research investigates the practical impact of artificial intelligence (AI) applications on the quality and effectiveness of communication between parents and Umair Bin Abi Waqqas Primary School (Cycle One), against the backdrop of rapid digital transformation in the Arab educational sector. The study is grounded in the urgent need to foster genuine partnerships between schools and families through modern communication channels that align with contemporary societal demands. The research employs both descriptive-analytical and action research methodologies, supported by a field experiment utilizing an AI-powered smart communication system. The study analyzes how AI technology may help overcome traditional barriers to interaction among parents, teachers, and school administrators. The findings reveal a marked improvement in response speed, clarity of messages, and overall satisfaction among both parents and educators. The research also highlights technical and human challenges related to the implementation of AI in the Arab educational context and offers practical recommendations for developing more effective and sustainable communication platforms in schools.

Index Terms:

Artificial Intelligence, School Communication, Parents, Digital Transformation, Communication Quality, Primary Education

Integrating SMART Technologies in Foreign Language Education: A Quantitative Study in Uzbekistan

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Abstract:

We investigated English teaching quality at a regional language institute in Uzbekistan (110 km from the center). A total of 127 participants took part in our survey, including 103 university students, 13 university teachers and 11 school teachers. The main goal of this study is to analyze the quality of lessons, technical and pedagogical skills, using various types of questions, in an education system where smartphone bans are in place, while the institution actively expands its digital infrastructure. Currently, our technological setup includes 4 interactive e-boards, 9 SMART TVs, 26 tablets, and 58 computers (40 in classroom and 18 in the library) to satisfy students and gather their opinions on necessary additions. To achieve the research objectives, we adopted a quantitative approach by conducting a structured survey. Data showed a strong consensus: SMART Technologies are more effective, though 8.7% still prefer traditional ways. Ultimately, we aim for digital progress without losing our native language and national identity.

Index Terms:

SMART Technologies, Foreign Language Education, Smartphone Restrictions, Quantitative Survey, Institutional Infrastructure, Higher Education

Learning Analytics as a Tool for Developing Teachers' Differentiation Skills in Higher Education

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Abstract:

Due to the rapid development of digital educational technologies and online learning environments, learning analytics is considered to be an effective tool for teaching a foreign language, especially in higher education, as it reveals data-driven insights about students' learning needs. This method enables educators to collect, analyze, and interpret data related to students' learning behaviors, academic performance, and engagement. Moreover, it fosters teachers' professional development and help monitor the effectiveness of their pedagogical techniques. This paper studies the potential of learning analytics in developing teachers' differentiation skills in FLE. The research provides how learning analytics can support personalized trajectories and enhance adaptive learning experiences. The findings demonstrate that the integration of learning analytics into pedagogical practice contributes to the development of critical thinking and digital competences of a teacher. A mixed-methods approach was employed involving university students enrolled in foreign language courses. Data were collected through learning management systems, academic assessments, classroom observations, and student surveys. The findings suggest that learning analytics contributes to more effective personalization of foreign language instruction, improves student engagement and motivation. Finally, practical recommendations for differentiated instruction are suggested for developing teachers' differentiation skill and improving teaching quality in FLE.

Index Terms:

Learning Analytics, English Language Teaching (ELT), Higher Education, Teachers' Professional Development, Personalization of Foreign Language Instruction, Data-Driven Decision-Making, Pedagogical Model, Differentiated Instruction, Differentiation Competence

Green Bytes: Harnessing AI for a More Sustainable Financial Future

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Abstract:

Artificial Intelligence (AI) has emerged as a transformative force in modern financial systems, significantly influencing investment decisions, market efficiency, and sustainable development practices across the world. Simultaneously, green finance has gained increasing importance as governments, financial institutions, and policymakers seek sustainable solutions to address environmental challenges, climate change, and long-term economic stability. In emerging economies, the integration of AI technologies with sustainable financial systems is becoming increasingly important for achieving balanced and inclusive economic growth.

Despite the rapid growth of literature on AI in finance and sustainable development, existing studies largely examine Artificial Intelligence, green finance, and economic growth separately. Limited research has comprehensively explored the interconnected relationship between AI adoption, green finance mechanisms, and sustainable economic growth, particularly in the context of emerging economies. Furthermore, issues related to ethical AI governance, transparency, and regulatory frameworks remain underexplored in existing research.

Therefore, the present study aims to examine the role of Artificial Intelligence and green finance in promoting sustainable economic growth in emerging economies. The study specifically investigates how AI-driven financial systems contribute to financial efficiency, renewable energy financing, and sustainability-focused economic development.

The study adopts a descriptive and analytical research design and is primarily based on secondary data collected from international databases, research journals, and government publications. The research incorporates variables such as Artificial Intelligence adoption, green finance, renewable energy consumption, and financial development to analyse their relationship with sustainable economic growth. Various statistical and econometric techniques, including regression analysis, panel data analysis, ARDL models, correlation analysis, and Granger causality tests, may be applied to evaluate the relationships among the variables.

The findings of the study indicate that Artificial Intelligence positively contributes to sustainable economic growth by improving financial transparency, enhancing investment efficiency, optimizing resource allocation, supporting renewable energy investment, and strengthening sustainable financial systems. The study also finds that the integration of AI with green finance can significantly enhance long-term sustainability and economic resilience in emerging economies. However, concerns related to algorithmic bias, ethical issues, data privacy, lack of transparency, and inadequate regulatory mechanisms continue to pose significant challenges to responsible AI adoption.

The study highlights important policy implications for governments, financial institutions, and regulatory authorities. It emphasizes the need for stronger governance frameworks, ethical and explainable AI systems, and sustainable investment strategies to ensure inclusive and environmentally responsible economic growth. The research contributes to the expanding literature on AI-driven sustainable finance and provides a foundation for future studies focusing on emerging economies and sustainable financial innovation.

Index Terms:

Artificial Intelligence, Green Finance, Sustainable Economic Growth, Emerging Economies, Renewable Energy

Malnutrition Detection Using Deep Learning

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Abstract:

Malnutrition is a serious health issue in the world because it has impacted on millions of people of various ages, especially in developing and resource-deprived countries. To avert health complication that may be encountered in the long run with malnutrition, such as retarded physical growth, poor immunity, and mental retardation, the malnutrition must be detected early. More traditional methods of the diagnosis process such as Body Mass Index (BMI) and anthropometric measures can be challenging to measure in remote settings since they usually need qualified specialists and measurement devices.

Due to the development of artificial intelligence recently, deep learning methods have become potential solutions to automated healthcare analysis. Specifically, the CNNs have been found to be very effective in deriving meaningful trends on visual data. The current paper focuses on a deep learning based detection of malnutrition that relies on image data. The suggested system is based on the following pipeline with multiple steps of image acquisition, preprocessing, features extraction, classification, etc. The model is trained using labeled data to determine various nutritional based states, and may, based on the above, do this efficiently and without being too invasive. The findings show the possible opportunities of deep learning models to assist in early diagnosis and enhance easy accessibility to healthcare services.

Index Terms:

Malnutrition Detection, Deep Learning, Convolutional Neural Networks, Medical Image Analysis, Healthcare AI

