INTERNATIONAL CONFERENCE ON

Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology

I2CRET-2025

Date: 18th & 19th September, 2025

Venue: Rome, Italy

Organized by:

IFERP Academy

International Conference on Collaborative Research in Education, Social Sciences, Humanities, Engineering and Technology (I2CRET-2025), Rome, Italy

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Theme:

"Collaborative Innovations for Sustainable Development: Solutions in Education, Social Sciences, Humanities, Engineering, and Technology"

PREFACE

We are delighted to extend a warm welcome to all participants attending International Conference on Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology (I2CRET-2025), taking place in Rome, Italy on 18th - 19th September 2025. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the field of Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for I2CRET-2025 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology. 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 Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology 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 I2CRET-2025.

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

ABOUT I2CRET - 2025

Welcome to I2CRET-2025, an esteemed international conference dedicated to fostering interdisciplinary collaboration and driving meaningful change across education, social sciences, humanities, engineering, and technology.

With the theme "Collaborative Innovations for Sustainable Development," this conference aims to advance transformative solutions that align with the United Nations' Sustainable Development Goals (SDGs). Through knowledge-sharing, research discussions, and innovative strategies, I2CRET-2025 will serve as a dynamic platform for scholars, industry professionals, and policymakers to address global challenges and contribute to a sustainable future.

Join us in the historic city of Rome, Italy, on September 18th - 19th, 2025, to engage in thought-provoking discussions, forge impactful collaborations, and drive sustainable progress in diverse fields. Together, let us shape a future that is inclusive, innovative, and resilient.

Benefits of the Conference:

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

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

By emphasising on collaborative multidisciplinary research I2CRET 2025 will offer the following benefits to participants

Scope of the Conference

I2CRET encompasses a broad spectrum of topics within the realm of education research. The conference invites submissions and discussions on, but not limited to:

Interdisciplinary Approaches for Sustainable Development

Collaboration across disciplines to address global sustainability challenges

Technology-Driven Innovations for Sustainability

The role of emerging technologies in advancing sustainable practices in education, engineering, and society.

Public Policy and Social Science Contributions

Developing policies and societal frameworks that promote sustainable development and social equity.

Engineering and Technological Solutions

Innovations in engineering for resource management, infrastructure, and sustainable technologies.

Humanities and Ethical Dimensions of Sustainability

Exploring ethical considerations and cultural perspectives in sustainability.

ABOUT IFERP

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

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

Mission: Upskilling the knowledge hub through technological innovation and excellence for the benefit of humanity.

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

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

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

MESSAGE FROM
MANAGING DIRECTOR, IFERP

Mr. A. SIDDTH KUMAR CHHAJER

MD & Founder,
IFERP, Technoarete Group

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 International Conference on Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology (I2CRET-2025) is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in the field of Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology.

This conference creates solutions in different ways and to share innovative ideas in the field of Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology. I2CRET-2025 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.

International Conference on Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology (I2CRET-2025) will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology from all over the world. I2CRET-2025 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the field of Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology.

MESSAGE FROM
CHIEF EXECUTIVE, IFERP

MR. RUDRA BHANU SATPATHY

CEO & Founder,
IFERP, Technoarete Group

IFERP is hosting the International Conference on Collaborative Research in Education, Social Sciences, Humanities, Engineering, and Technology (I2CRET-2025) this year in month of 18th - 19th September 2025, Rome, Italy. The main objective of I2CRET-2025 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.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Koo Ah-Choo

Professor, Faculty of Creative Multimedia (FCM) Multimedia University (MMU), Malaysia

Dr. Koo Ah-Choo is a Professor at the Research Centre for Interaction and Experience Design, part of the Centre of Excellence for Immersive Experience, and a dedicated academician at the Faculty of Creative Multimedia, Multimedia University (MMU). Her work focuses on the integration of creative multimedia and digital innovations in education, particularly in improving student performance, collaboration, and well-being. With a Ph.D. in Creative Multimedia (Educational Technology) and a Bachelor's degree in Science and Computer with Education, Dr. Koo has over 25 years of experience in teaching and research. Her interests include technology- enhanced learning, media content creation, lifelong learning, and sustainable development. Recently, she has worked on projects involving web-based interactive technology, animation, video innovations, mobile design for older women, and digital cities. Dr. Koo has collaborated with researchers on practical design artifacts such as gamification methodologies, character designs, and wellness-focused micro- websites. Her current research explores the use of online interactive technologies, including AI in media creation and module development for higher education. At MMU, Dr. Koo has taken on various administrative and leadership roles, including Deputy Director of the Industrial Collaborations & Engagement Centre, Deputy Director of the Digital Cities Research Institute, and Dean of the Learning Institute for Empowerment. She is an alumna of the International Dean Course and has also contributed to the development of academic leadership as part of the International Deans' Course Malaysian Chapter in 2019 – 2021. She is currently chairing the International Conference on Creative Multimedia for 2024 and 2025. Beyond her professional endeavors, Dr. Koo acts by volunteering in her local community for charity and recycling initiatives through the International NGO Tzu Chi Foundation.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Rajkumar Palaniappan

Associate Professor, Department of Mechatronics Engineering, University of Technology, Bahrain

Dr. Rajkumar Palaniappan is an Associate Professor in the Department of Mechatronics Engineering at the University of Technology Bahrain. He is a former head of the same department and has previously served as faculty at VIT University, India and completed a post- doctorate at UTEM, Malaysia. Dr. Rajkumar earned his PhD and MSc in Mechatronic Engineering from Universiti Malaysia Perlis (UniMAP), Malaysia, and holds a BE degree in Mechatronic Engineering from Anna University, India. His current research focuses on Robotics, Artificial Intelligence, Signal Processing, Machine Vision, Automation, and Smart Manufacturing. He has published over 75 articles indexed in Scopus and Web of Science and has guided several students at various academic levels.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Mehdi Manoochehrzadeh

CEO & Language Educator Zerodale Inc. Centre for Research in Entrepreneurship Education and Development, Toronto, Canada

A dynamic and forward-thinking English Language Education Specialist, Dr. Mehdi Manoochehrzadeh brings over a decade of expertise in innovative language instruction and curriculum development. As the founder of both Manoochehrzadeh Language Academy and Zerodale Inc., Dr. Manoochehrzadeh has demonstrated a unique ability to lead educational initiatives that merge pedagogy with cutting-edge technology. Dr. Manoochehrzadeh has is widely recognized for developing the groundbreaking "Puzzling Method"—an interactive, learner-centered approach that has revolutionized English language acquisition for over 100,000 learners across the globe. Dr. Manoochehrzadeh has academic and professional endeavors focus on transforming traditional language education through gamified learning, adaptive technologies, and immersive instructional design. He holds multiple international certifications in English language teaching and has authored several influential publications in the field. With a passion for research-informed practice, He continues to contribute to global discussions on effective language learning strategies, with the aim of making English education accessible, engaging, and impactful for diverse learner.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Gianluca Mattarocci

Professor, Department of Banking
University of Rome Tor Vergata
Rome, Italy

Gianluca Mattarocci (PhD and M.A.) is full professor of Banking at the University of Rome Tor Vergata where he is also the director of the Bachelor in Business Administration and Economics and the Erasmus Academic Coordinator for the School of Economics. He is currently visiting professor at Luiss University (Italy), Luiss Business School (Italy), Athens University of Economics and Business (Greece), Institute of Management and Technology – Dubai (UAE), and Institute of Management and Technology – Ghaziabad (India). He teaches corporate finance, banking and real estate and he published more than 150 research output with national and international publishers. He is currently board member of the European Real Estate Society and he is former president of the European Financial Management Association.

BIOGRAPHY OF SESSION SPEAKER

Dr. Carmen Bizzarri

Assistant Professor, Department of Human Science, Economic Geography, European University of Rome, Roma RM, Italy

Carmen Bizzarri, PhD, is currently an Associate Professor of Economic Geography at the European University of Rome. She previously served as Coordinator of the Master's Program in Tourism Organization Management at the same university and has been a contract lecturer at several Italian public universities. She has authored two monographs, contributed to numerous edited volumes, and published in national and international journals. Her research primarily focuses on tourism geography and the sustainable, inclusive enhancement of resources across different territorial contexts. She is a member of the Scientific Advisory Board for the new series Tourism Studies in the Mediterranean Region (Science Publishing Group) and serves as a peer reviewer for several international journals. In 2023, she was appointed as a consultant for the Italian Ministry of Tourism, tasked with preparing a report on the evaluation of public tourism policies, and as Chair of the Evaluation Committee for funding allocated to small municipalities. From 2023 to 2024, she coordinated the Territorial Development Hub in the Municipality of Castrocielo, which won the Borghi Line B funding call by the Italian Ministry of Culture. Additionally, she works as a consultant for Toscana Promozione on the development of school tourism. She is frequently invited as a keynote speaker at national and international conferences to present her research in tourism. She is also a member of the Scientific Committee of the Generative Welfare, Sustainability, and Rights Research Center at the European University of Rome, the International Gran Sasso Forum, BTO (Buy Tourism Online), the Roots Tourism Committee under the Italian Ministry of Foreign Affairs (MAECI), the Guarantors' Committee of SISTUR, and serves as National Vice President of Confassociazioni Turismo, with a focus on sustainable tourism. Together with Maestro Massimiliano Finazzer Flory, she codirected the artistic project "Dante for the Villages: A Fabulous Journey Through the Italy That Exists", supported by the Ministry of Tourism and endorsed by the Dante Alighieri Society, the Italian Geographical Society, the Association of Italian Geographers, and the Vatican City's Jubilee 2025.

BIOGRAPHY OF SESSION SPEAKER

Dr. Dheyaa Shaheed Al-Azzawi

Professor, College of Computer Sciences & Information Technology Wasit University, Iraq

Prof. Dr. Dheyaa Shaheed Al-Azzawi Professor of Artificial Intelligence, College of Computer Sciences & IT, Wasit University Prof. Dr. Dheyaa Shaheed Al-Azzawi is a distinguished Professor of Artificial Intelligence at the College of Computer Sciences and Information Technology, Wasit University. He holds a Ph.D. in Computer Science from the University of Baghdad and a Master's degree in Computer Science from the University of Babylon. His research interests center around Artificial Intelligence, with a particular focus on pattern recognition, machine learning, deep learning, and brain signal classification and recognition. Prof. Al-Azzawi serves as the Editor-in-Chief of the Computer and Mathematics Journal at his college and leads the scientific team within the institution. He has supervised numerous master's theses and has delivered a wide range of lectures on AI, data mining, and machine learning. He is also an active researcher with several published papers in reputable journals in the field of AI. At this conference, Prof. Al-Azzawi is participating as a speaker.

BIOGRAPHY OF SESSION SPEAKER

Dr. Renjith V Ravi

Assistant Professor, School of Applied Sciences Engineering and Technology, Rashtriya Raksha University, Gandhinagar, Gujarat, India

Dr Renjith V Ravi is presently working as the Head of Center for research on Cyber physical systems at School of Applied Sciences, Engineering and Technology, Rashtriya Raksha University, Gandhinagar, Gujarat. Previously he employed as Associate Professor and Head of the Department of Electronics and Communication Engineering and Institution level Academic Coordinator of the Post Graduate Programs at MEA Engineering College, Kerala, India. He possesses B.Tech. degree in Electronics and Communication Engineering in, M.E. degree in Embedded System Technology and Ph.D. in Electronics and Communication Engineering. He is a member of the panel of academic auditors of APJ Abdul Kalam Technological University, Kerala and had conducted external academic auditing in various affiliated institutions under the same University. He had published several research articles in SCIE and Scopus indexed journals, Edited books and international conferences inside and outside the country. He is an academy graduate and academy mentor in Web of Science and a certified peer reviewer from Elsevier Academy. He has been serving as a reviewer for various SCIE and Scopus indexed journals from IEEE, ACM, Springer, Elsevier, Taylor & Francis, IET, Inderscience, World Scientific, IOS Press DeGruyter and IGI Global and completed more than 1000 peer reviews in Web of Science. He has been published six edited books from renowned international publishers. He got granted one patent, one industrial design and two copyrights. He had been awarded several outstanding achievement and outstanding service awards, and several best paper awards from international Conferences. He is a Fellow of IETE and member of IE, ISTE, CRSI, IACSIT, IAENG, SDIWC and senior member of SCIEI and SAISE and a chartered engineer certified by the Institution of Engineers (India). He has been served as the Program Committee member, Session Chair as well as reviewer of several National and International conferences conducted in India and abroad. His research areas include Image Cryptography, Image Processing, Machine Learning, Internet of Things Etc. He is currently focusing his research in the area of secure image communication using image cryptography.

BIOGRAPHY OF SESSION SPEAKER

Dr. Achyut Trivedi

Chairperson, Centre of Excellence for Additive Manufacturing Ganpat University, India

Dr. Achyut Trivedi is a dedicated academic and researcher specializing in Additive Manufacturing (3D Printing). He holds a Ph.D. in Additive Manufacturing from Pandit Deendayal Energy University and currently serves as the Chairperson of the Centre of Excellence for Additive Manufacturing at Ganpat University. With a strong foundation in Mechanical Engineering and Computer-Aided Design, Dr. Trivedi has contributed extensively to research and education through numerous national and international publications, lectures, and collaborative projects. His expertise spans polymer-based AM technologies, material optimization, and process innovation. Dr. Trivedi has led major government-funded projects, including the establishment of a National Additive Manufacturing Centre, and has received several prestigious awards, such as the A.P.J. Abdul Kalam Best Researcher Award. He is a life member of multiple professional bodies and actively mentors students and professionals, aiming to bridge traditional engineering with cutting-edge manufacturing technologies.

BIOGRAPHY OF SESSION SPEAKER

Dr. Rabia Tabassum

Microbiologist National Institutes of Health, Pakistan

Dr. Rabia Tabassum is a Microbiologist at the Centre for Environmental and Occupational Health, NIH Islamabad, with expertise in bacteriology, infectious diseases, antimicrobial resistance, bacteriophages and mycology. Her work focuses on improving diagnostic methods, strengthening disease surveillance, and promoting infection control. She is committed to advancing public health through collaborative, research-driven solutions.

BIOGRAPHY OF SESSION SPEAKER

Dr. Fernando Ortiz-Rodriguez

Full Professor, AI&I Lab Tamaulipas Autonomous University, México

Fernando Ortiz-Rodríguez IT Strategic Advisor for INDEX National: His role as an advisor for the National Manufacturing Association (INDEX). This position relies on the manufacturing sector seeking his expertise to navigate the complexities of IT, AI, and Cybersecurity, including emerging challenges and future trends. His involvement likely includes guiding strategic technology adoption, digital transformation, and cybersecurity best practices. Former IT Manager – Training-HR at Emerson Electric and Delphi: His experience in a multinational industrial company like Emerson Electric provides him with a real-world understanding of the IT challenges and opportunities within the manufacturing sector, particularly concerning IoT and Industry 4.0 initiatives. This practical experience likely informs his advisory role with INDEX. Former IT, HR, and Quality Roles at an Oil and Gas Company. His experience in international and Mexican Oil and gas companies provides a wide view of different processes. Full Professor and Head of the AI&I Lab at UAT: His position at the Tamaulipas Autonomous University highlights his commitment to academic research and fostering innovation in Artificial Intelligence. Leading the AI&I Lab signifies his role in guiding research projects, mentoring students, and shaping the direction of AI development within the university. Member of SNI Level 1 (Conacyt): This prestigious recognition by the National Council of Science and Technology in Mexico underscores the quality and impact of his research contributions at a national level. Membership in the SNI signifies that his work is evaluated by his peers as significant and influential within his field. Active Researcher and Author: His extensive list of edited books and publications in reputable international journals and conference proceedings (Springer, Taylor and Francis, IET, Elsevier, IGI Global and IOS Press) demonstrates his active engagement in research across various cutting-edge areas like AI, cybersecurity, data science, semantic web, and electronic governance. His work contributes to the global knowledge base in these fields. Conference Organizer: His involvement in organizing international conferences like EGETC, KGSWC, AI4S,and AMLDA.

BIOGRAPHY OF SESSION SPEAKER

Dr. Megha Bhushan

Assistant Professor, Department of Computer Languages and Systems University of Seville, Spain

Dr. Megha Bhushan is with Department of Computer Languages and Systems, University of Seville, Spain. Earlier she was Assistant Dean, Research & Consultancy at DIT University, Dehradun, India. She received her B. Tech degree in Information Technology from Himachal Pradesh University, Shimla, India, and ME (Software Engineering) and PhD (Computer Science) degrees from Thapar University, Punjab, India. She was awarded with a fellowship by UGC, Government of India, in 2014. In 2017, she was a recipient of Grace Hopper Celebration India (GHCI) fellowship. She has 9 patents (6 published and 3 granted) and associated with three research projects funded by Ministry of Science and Innovation, and Andalusian Government, Spain. She has published many research articles in international journals and conferences of repute. Further, she is the editor of many edited books with different publishers such as Wiley-Scrivener, CRC Press, Taylor & Francis Group, and Bentham Science. Her research interests include Artificial Intelligence, Machine Learning, Knowledge representation, Expert systems, Software quality and Healthcare. She is also reviewer and editorial board member of many international journals.

BIOGRAPHY OF SESSION SPEAKER

Dr. Hossein Isaee

Research Assistant, Department of English Language and Literature, Islamic Azad University, Iran

Hossein Isaee holds a PhD in Teaching English to Speakers of Other Languages. His areas of interest include online/remote teaching, ELT material development and evaluation, and technology-enhanced language instruction. He is an ELT instructor, author, and researcher.

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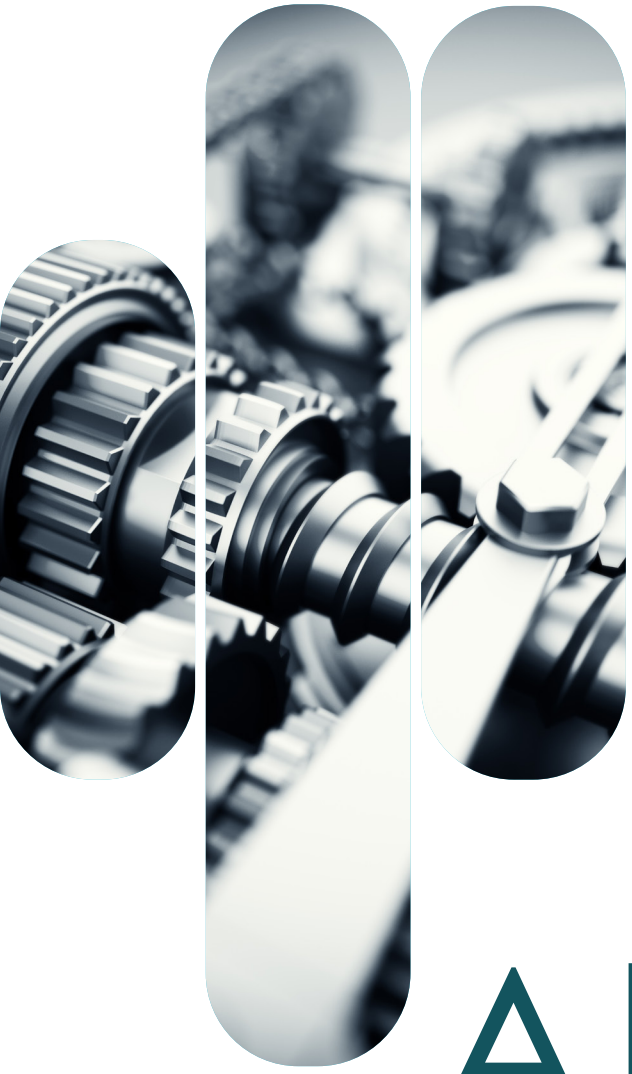

Abstract

Mapping The Mind of a Nation: Analysing the Public Safety Perception Index in Malaysia

Fauzilah Salleh
Professor, Universiti Sultan Zainal Abidin, Terengganu, Malaysia

Mazlina Che Mustapa
Universiti Sultan Zainal Abidin, Terengganu, Malaysia

Abstract:

This study conducted the Malaysian Public Safety Perception Index (PSI) 2023 to identify the factors influencing public perception of safety and public order in Malaysia. The scope of the study encompasses all states nationwide that were categorized into five zones based on the Public Safety and Order Policy (DKKA) 2019 and the National Security Policy (DKN) 2021–2025. This study assessed seven core dimensions: constitutional supremacy, territorial integrity, public order, citizen well-being, national cohesion, governance, and the protection of strategic national interests. Furthermore, this study used the quantitative approach by distributing an online questionnaire to 10,035 respondents. The findings indicate that public safety is low at a PSI score 0.52 (52.25%). Safety perception factors include neighbourhood relations, psychological aspects, media influence, physical environment, law enforcement, and crime prevention programs. This study proposes several policy recommendations to enhance public safety and order and evaluate the performance of agencies under the Ministry of Home Affairs (KDN).

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Hybrid Model Using RSA-KEM and Ethereum for Online Vote Casting

Priyanka N. Kokare
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Student, Department of Information Technology, Vidya Pratishthan's kamalnayan Bajaj Institute of Engineering & Technology, Baramati, Maharashtra, India

Abstract:

Due to digitalization and AI technology, whole world is moving towards the modernization of all digital applications. So here in this paper we have upgraded existing online election system by adding RSA-KEM, AES and blockchain technology. These new technologies with respect of higher throughput, and achieved major outcomes with respect to security principles as confidentiality is preserved, integrity is achieved through Meta mask and availability is maintained. The study focuses on designing a safe, attack proof and translucent methodology which will store user votes in more prominent secured way, We used Ethereum blockchain with ganache for local development to achieve immutability and transparency. Voting process is initialized by written smart contracts based on solidity. Solidity is used for registration of voters and counting of votes. A two factor authentication and email verification through OTP is used to guarantee the voter identification. Interplanetary file system (IPFS) are used to store list of voters and votes casted by voters. By using angular built frontend, the registration of voters, choices of ballots and authentication is made so simple. java spring boot is used to develop backend which was used by Web3j. This backend was used to offer blockchain interactions, authentication, and encryption. These proposed system, is useful for governmental organizations, multinational corporations, Educational institutions and commercial associations for conducting their elections smoothly.

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Electroencephalographic Biomarker Detection for Dementia Using Convolutional Neural Network-Based Analysis: A Causal and Outcome-Oriented Study

Habi Patrick
Assistant Professor, Department of Information Technology, Vidya Pratishthan's kamalnayan Bajaj Institute of Engineering & Technology, Baramati, Maharashtra, India

Dr. Shailja Shukla
Sanjeev Agrawal Global Educational, (SAGE) University, Bhopal

Abstract:

Dementia encompasses a spectrum of progressive neurodegenerative conditions that gradually erode memory, cognitive abilities, and behavioral functioning, severely diminishing quality of life. Traditional diagnostic practices often rely on clinical assessments and neuroimaging, which may be costly or lack early-stage sensitivity. In contrast, electroencephalography (EEG) has emerged as a non-invasive, cost-effective tool capable of capturing subtle neural abnormalities linked to cognitive decline.

With the rise of artificial intelligence (AI), particularly deep learning, novel approaches have surfaced for analyzing complex biomedical data. Among them, Convolutional Neural Networks (CNNs)—renowned for their strength in image and signal processing—offer significant promise in interpreting EEG signals for dementia detection. By learning spatial and temporal patterns directly from EEG recordings, CNNs can identify characteristic changes in brain activity associated with various stages of dementia.

This paper delves into the dual facets of this approach: the cause, examining why EEG signals are suitable for dementia diagnosis and how CNNs process them; and the effect, exploring the practical outcomes, clinical relevance, and challenges of adopting this methodology. We first investigate the neurophysiological alterations induced by dementia and their manifestations in EEG patterns. Early and precise identification of these signatures is crucial for timely intervention and improved long-term care.

Through comprehensive literature analysis and empirical findings, we highlight how CNN-based models consistently outperform traditional machine learning techniques and even expert evaluations in some scenarios. The adoption of such systems in clinical and research environments has shown promising outcomes—ranging from increased diagnostic accuracy and early detection capabilities to economic scalability and improved patient management.

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Nonetheless, this paradigm is not without limitations. Issues such as inter-subject variability in EEG data, black-box behavior of deep learning models, and ethical implications surrounding data privacy and algorithmic fairness must be addressed. To that end, we propose forward-looking strategies, including multi-modal diagnostic frameworks, federated learning for privacy-preserving model training, and the development of explainable AI (XAI) to foster transparency and trust.

Ultimately, integrating EEG with CNN-based analysis holds transformative potential in redefining how dementia is detected and managed—offering a pathway toward accessible, scalable, and non-invasive neurological diagnostics.

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A Multidisciplinary Collaboration Framework for VR-Enhanced LMS Integration for Immersive Learning in Higher Education

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Abstract:

This research investigates the collaborative framework involved in developing an immersive Virtual Reality (VR) module integrated into a Learning Management System (LMS) for immersive teaching in automotive engineering for higher education. Findings from team reflections, process documentation, and stakeholders' interviews reveal several key enablers of effective collaboration: clearly defined roles, shared ownership of pedagogical design, iterative feedback cycles, and the use of immersive walkthroughs to align interdisciplinary perspectives. Challenges such as communication barriers, technical-pedagogical misalignments, and differing expectations were addressed through structured co-design sessions and transparent workflows. These insights informed the development of a four-phase collaborative framework: Shared Vision Formation, Cross-Disciplinary Design Mapping, Agile Iterative Development, and Joint Evaluation & Feedback Loops. This research contributes to SDG 11 (Sustainable Cities and Communities) agenda by offering a replicable methodology for conducting multidisciplinary educational research. It also supports SDG 4 (Quality Education) and SDG 17 (Partnerships for the Goals) by promoting inclusive, co-developed, and technology-enhanced learning environments. The framework presented can guide institutions seeking to integrate immersive technologies while strengthening cross-functional collaboration in digital education innovation.

Keywords:

virtual reality, learning management system, immersive learning, multidisciplinary collaboration, co-design, agile principles, higher education.

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"Integrating Sahaja Yoga Meditation Practices into Secondary Education: A Pathway to Emotional Maturity and Academic Success"

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Abstract:

Adolescents in secondary education face increasing levels of academic pressure, social anxiety, and emotional instability, which often hinder their overall performance and well-being. Emotional maturity, the ability to regulate emotions effectively and adapt to challenges, plays a crucial role in shaping both academic success and personal growth. This study investigates the impact of integrating meditation practices into secondary education as a pathway to enhancing emotional maturity and academic achievement. A quasi-experimental design was employed with a sample of secondary school students who participated in a structured meditation program over a period of twelve weeks. Standardized tools such as the Emotional Maturity Scale and academic performance indicators were used to measure outcomes before and after the intervention. Findings revealed significant improvement in students' emotional regulation, self-confidence, concentration, and academic performance. Qualitative feedback from teachers and students further highlighted reduced stress levels, improved classroom behavior, and increased motivation to learn. The results suggest that meditation can serve as a valuable pedagogical tool in secondary education, contributing not only to academic success but also to holistic development. The study recommends incorporating meditation practices within school routines to align with the goals of the National Education Policy (NEP 2020) and Sustainable Development Goals (SDG 3: Good Health and Well-being, SDG 4: Quality Education).

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Constructing National Identity in Uzbek Literature: The Contribution of Uzbek Writers to the Formation of National Consciousness

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Abstract:

The purpose of this presentation is to analyze the role of Soviet Uzbek writers in shaping the discursive foundations of nation-building and the construction of collective memory in their republic. Employing a constructivist framework, the author investigates the historical trajectory of modern Uzbekistan—from the emergence of the first national movement in Transoxiana at the turn of the 19th and 20th centuries to the consolidation of a distinct Uzbek political nation in the second half of the 20th century. Central to this analysis is the Bolshevik nationalities policy, which functioned as an institutional mechanism of nation-building across all Soviet republics. Within this ideological and political framework, the Uzbek Soviet Socialist Republic cultivated its own intellectual elite, whose contribution was crucial to the codification of national culture. Writers, in particular, assumed a formative role: through their literary works, they mediated historical consciousness for mass audiences, providing narratives of pivotal events and valorizing prominent figures of Central Asia's pre-revolutionary past. Among this literary generation, Aybek, Pirimkul Qodirov, and Adyl Yakubov were especially influential. Their historical novels not only reimagined the past but also canonized figures such as Mirzo Ulugh Beg, Alisher Navoi, and Babur, thereby integrating them into the symbolic repertoire of Uzbek nationhood. These figures continue to be venerated as national heroes, underscoring the enduring impact of literature on the nation-building process in Uzbekistan.

Acknowledgements:

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Advancements in Deep Learning for Lung Disease Classification and Severity Prediction: A Comprehensive Survey (till 2025)

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Abstract:

Lung diseases such as pneumonia, chronic obstructive pulmonary disease (COPD), tuberculosis, and lung cancer remain major contributors to global morbidity and mortality, necessitating rapid and reliable diagnostic methods. Recent advancements in deep learning (2023–2025) have significantly enhanced the accuracy, robustness, and clinical applicability of automated lung disease classification and severity prediction. This survey provides a comprehensive review of state-of-the-art models and methodologies, highlighting key innovations including transformer-based architectures, explainable AI (XAI), multimodal fusion, ensemble learning, and domain-specific applications. Studies leveraging Vision Transformers (ViT) and hybrid CNN–transformer frameworks have reported accuracies up to 99% in chest X-ray classification tasks, outperforming conventional CNNs. Confidence-aware Bayesian models and saliency-based visualization approaches have improved interpretability and trustworthiness in clinical practice. Multimodal systems integrating imaging, radiomics, and epidemiological data have achieved superior performance, demonstrating the growing value of holistic approaches. Furthermore, ensemble models such as PulmoNet and specialized architectures like MobileNet-Lung and DenseNet-Attention have excelled in handling imbalanced datasets and rare subtypes, with area under curve (AUC) values often exceeding 0.95. Despite these advancements, challenges persist in external validation, dataset diversity, and generalization across healthcare settings. This survey not only synthesizes the progress achieved in the past three years but also identifies future research directions toward clinically deployable, explainable, and equitable deep learning systems for pulmonary healthcare.

Keywords:

Deep learning, Lung disease classification, Severity prediction, Transformers, Explainable AI, Multimodal fusion, Ensemble learning.

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Epileptogenic Zone Localization in MEG: A Comparative Study of Inverse Methods for Clinical Translation

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Abstract:

Accurate presurgical delineation of epileptogenic networks remains a critical challenge in drug-resistant epilepsy. This study presents a systematic evaluation of four inverse problem methodologies—Minimum Norm Estimation (MNE), Dynamic Statistical Parametric Mapping (dSPM), standardized Low-Resolution Brain Electromagnetic Tomography (sLORETA), and weighted Maximum Entropy on the Mean (wMEM)—applied to gamma-oscillation biomarkers in magnetoencephalography (MEG). Using a novel tri-metric framework, we quantified: Spatial precision via Dice Similarity Coefficient (DSC) against intracranial EEG (iEEG) ground truth, Temporal fidelity through Pearson correlation of source time courses, and Network specificity by active volume measurements.

Analysis of pharmacoresistant epilepsy patient revealed method-dependent profiles: sLORETA demonstrated superior cortical localization (DSC=0.72±0.08), while wMEM uniquely identified deep mesiotemporal sources (DSC=0.68±0.12) missed by other approaches. dSPM provided extensive network coverage (active volume=632.4 cm^3), whereas MNE offered focal estimates (212.6 cm^3). Crucially, temporal correlations exposed complementary detection capabilities—while MNE/dSPM/sLORETA showed high concordance ($r>0.89$), wMEM captured distinct high-frequency activity ($r=-0.03$).

These findings advocate for a dual-method clinical protocol: sLORETA for cortical seizure onset zones and wMEM for deep source detection. The proposed metrics establish a standardized framework for optimizing inverse method selection in epilepsy surgery planning.

Keywords:

Epilepsy surgery planning, MEG source imaging, inverse problem, gamma oscillations, sLORETA, wMEM.

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CFD-Based Comparative Analysis of Tube Geometry and Baffle Design on Shell-and-Tube Heat Exchanger Performance Using SolidWorks

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Abstract:

Shell-and-tube heat exchangers (STHEs) continue to dominate industrial applications because of their durability and adaptability across a wide range of operating conditions. As the push for higher energy efficiency intensifies, the use of Computational Fluid Dynamics (CFD) has become increasingly valuable for enhancing exchanger designs, supplementing and surpassing conventional analytical techniques. In this research, a comparative evaluation was carried out between two tube geometries—circular and square—in combination with two baffle arrangements: the traditional segmental type and the disk-and-doughnut design. Simulations were performed using SolidWorks Flow Simulation to assess steady-state thermal performance, focusing on outlet temperatures for both the shell-side and tube-side fluids. The ε–NTU method was then applied to determine exchanger effectiveness. The results indicate that the circular tube paired with a segmental baffle yielded the best performance (ε = 0.824), while the square tube with a disk-and-doughnut baffle produced a lower yet acceptable efficiency (ε = 0.752). Overall, the findings confirm that the interaction between tube geometry and baffle configuration plays a decisive role in the thermal characteristics of STHEs, emphasizing the need for their combined optimization in future designs.

Keywords:

Computational Fluid Dynamics (CFD), Shell-and-Tube Heat Exchanger (STHE), Tube Geometry, Baffle Design, Heat Transfer Efficiency, Pressure Drop, Thermal Performance, Energy Optimization.

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