

International Conference on Societal Transformation through Engineering, Education, Social Science, and Humanities



21st & 22nd May, 2026



Astana, Kazakhstan

ICSTESH 2026



Organized by
IFERP Academy

Academic Partner
Yosh Volontyorlar Akademiyasi, Uzbekistan



International Conference on Societal Transformation through Engineering, Education,
Social Science, and Humanities (ICSTESH-2026), Astana, Kazakhstan

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Conference **Theme**

“ICSTESH 2026



**Bridging Innovation and
Inclusion: Empowering
Global Societal
Transformation for a
Sustainable Future**

Preface

We are delighted to extend a warm welcome to all participants attending International Conference on Societal Transformation through Engineering, Education, Social Science, and Humanities (ICSTESH-2026), taking place in Astana, Kazakhstan on 21st & 22nd May, 2026. 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 Sustainable Agriculture and Climate Resilience. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for ICSTESH-2026 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Engineering, Technology and Management. 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 Modern Optimization and Technological Advancement for Resilient Smart Systems 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 ICSTESH-2026.

Since March 2026, the Organizing Committees have received more than 20+ manuscript papers, covering all aspects of ICSTESH-2026. After review, approximately 4 papers were selected for inclusion in the proceedings of ICSTESH-2026. 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 ICSTESH-2026

“Bridging Innovation and Inclusion: Empowering Global Societal Transformation for a Sustainable Future” highlights the vital intersection of innovation and learning in addressing today’s most pressing global challenges. By fostering inclusive education and harnessing the power of technology, this conference aims to equip future leaders with the skills, knowledge, and mindset needed to create sustainable solutions. It emphasizes the importance of interdisciplinary collaboration, ethical innovation, and youth empowerment to drive progress aligned with the United Nations Sustainable Development Goals (UN SDGs), ensuring a more resilient and equitable world for generations to come.

Conference Objectives

The primary aim of ICSTESH 2026 is to advance sustainable, inclusive, and human-centered development through interdisciplinary collaboration. The conference focuses on:

Fostering Interdisciplinary Collaboration:

Uniting experts from engineering, education, social sciences, and humanities to co-create innovative solutions for societal progress.

Translating Research into Real-World Impact:

Connecting academic insights with practical strategies for communities, industries, institutions, and policymaking bodies.

Promoting Innovation Aligned with the UN SDGs:

Showcasing transformative ideas, sustainable technologies, and educational reforms that contribute directly to global Sustainable Development Goals.

Empowering Emerging Leaders & Change-Makers:

Providing a global platform for students, educators, researchers, and early-career professionals to lead, innovate, and contribute to sustainable societal transformation.

About **IFERP**

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.

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.

From **Welcome Message**



Mr. Muzaffarov San'atbek

Founder and Director, Yosh Volontyorlar Akademiyasi & Oltin Qanot Volontyorlari, Uzbekistan

It is my great honor and privilege to extend a heartfelt welcome to all distinguished researchers, academicians, industry professionals, and participants attending the International Conference on Societal Transformation through Engineering, Education, Social Science, and Humanities (ICSTESH-2026).

As the Founder and Director of Yosh volontyorlar akademiyasi and Oltin Qanot Volontyorlari, organizations dedicated to empowering youth through volunteerism, education, and social responsibility, I am deeply inspired by the vision of this conference. Bringing together minds from across the globe to address the pressing challenges of our time through interdisciplinary collaboration is both timely and essential.

In Uzbekistan, we believe that the future belongs to those who invest in knowledge, innovation, and human potential. Our organizations strive every day to nurture young leaders who are not only skilled and educated, but also compassionate and globally aware. This conference embodies exactly that spirit — the belief that education, technology, and social transformation are deeply interconnected forces that can shape a better world.

I commend the Institute for Educational Research and Publication (IFERP) for organizing this important international forum and for creating a platform where researchers and practitioners can share their insights, findings, and innovative ideas. I am confident that the discussions and collaborations born at this event will contribute meaningfully to the advancement of education and social development worldwide.

I wish all participants a productive, inspiring, and enriching conference experience. May your exchanges spark new ideas and lasting partnerships that transcend borders and drive positive change.

Thank you, and I wish the conference every success.

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 Societal Transformation through Engineering, Education, Social Science, and Humanities (ICSTESH-2026), 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 Societal Transformation through Engineering, Education, Social Science, and Humanities.

This conference creates solutions in different ways and to share innovative ideas in the field of Societal Transformation through Engineering, Education, Social Science, and Humanities. ICSTESH-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.

International Conference on Societal Transformation through Engineering, Education, Social Science, and Humanities (ICSTESH-2026) will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Science and Engineering from all over the world. ICSTESH-2026 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the field of Societal Transformation through Engineering, Education, Social Science, and Humanities.

From Chief Executive, IFERP



Mr. Rudra Bhanu Satpathy

CEO & Founder, IFERP
Technoarete Group



IFERP is hosting the International Conference on Societal Transformation through Engineering, Education, Social Science, and Humanities (ICSTESH-2026) this year in month of 21st & 22nd May, 2026, Astana, Kazakhstan. The main objective of ICSTESH-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. Ts. Syahrul Nizam bin Junaini

Universiti Malaysia Sarawak
Malaysia



Ts. Syahrul Nizam Junaini is a Senior Lecturer at the Faculty of Computer Science and Information Technology, Universiti Malaysia Sarawak (UNIMAS), and a Research Fellow at the Data Science Center and Centre for Spatially Integrated Digital Humanities (CSIDH), UNIMAS. Formerly the Deputy Director (Learning Technology) at the Centre for Applied Learning and Multimedia, he is a distinguished academic recognized nationally. He is a recipient of the Malaysia National Academic Award (2017), Sarawak Maal Hijrah Award (2018) and Malaysia Digital Transformation Award (2024). He is a member of National AI Office (NAIO) working group for AI talent and an expert member for Strategic AI Group for Education (SAGEAI), UNIMAS. He published his articles in top-tier Q1 journals such as Journal of Cleaner Production, Education and Information Technologies and Agricultural Systems. He has been invited as a keynote speaker at international conferences in India, Japan, China, and Indonesia.

About **Keynote Speaker**



Dr. Davy Tsz Kit Ng

The Education University of
Hong Kong, China



Dr. Davy Ng is currently an Assistant Professor at the Education University of Hong Kong. He has been an IT Panel Head at a local secondary school in Hong Kong. He holds PhD Education and Technology from the University of Hong Kong (HKU), MEd Educational Psychology, BSc Computer Science, and Postgraduate qualification in ICT Education from the Chinese University of Hong Kong. His research interests lie in the areas of (Generative) AI literacy, human-AI interaction, metaverse, STEAM education, and technology-enhanced pedagogic innovation. He has published over 60 articles, many in Q1 journals. His work is informed by recent research on using ChatGPT in self-regulated learning, mobile computational thinking, and conceptualising AI literacy and Metaverse. He has been named in the 2024 and 2025 Stanford's List of World's Top 2% Scientists in Education.

About Keynote Speaker



Dr. Kettani Houssain

Professor, Al Akhawayn University,
Morocco



Dr. Houssain Kettani received the Bachelor's degree in Electrical and Electronic Engineering from Eastern Mediterranean University, Cyprus, and Master's and Doctorate degrees both in Electrical Engineering from the University of Wisconsin, Madison. Dr. Kettani has over twenty years of academic experience, he served as faculty member at the University of South Alabama, Jackson State University, Polytechnic University of Puerto Rico, Fort Hays State University, Florida Polytechnic University, Dakota State University and University of South Carolina Aiken. He is currently a professor of computer science at Al Akhawayn University in Ifrane, Morocco. Dr. Kettani also has served as Staff Research Assistant at Los Alamos National Laboratory, Visiting Research Professor at Oak Ridge National Laboratory, Visiting Research Professor at the Arctic Region Supercomputing Center at the University of Alaska and Visiting Professor at the Joint Institute for Computational Sciences at the University of Tennessee. Dr. Kettani's current research interests include cybersecurity and data analytics. He presented his research in over one hundred refereed conferences and journal publications and according to Google Scholar, his work exceeded one thousand citations by researchers all over the world. He chaired over one hundred international conferences throughout the world and successfully secured external funding in millions of dollars for research and education from US federal agencies such as NSF, DOE, DOD, and NRC.

About **Keynote Speaker**



Dr. Ipseeta Nanda

Professor, Vice Chairperson & Director
Rourkela Institute of Technology, India



Prof. (Dr) Ipseeta Nanda is presently working as a Vice-Chairperson Cum Director at RIT, Kalunga, Odisha, India. Dr. Nanda did her doctorate at CAPGS, Biju Patnaik University of Technology, Rourkela, Odisha, India. Her area of research is System-on-Chip Design and Internet of Things. Artificial Intelligence, Machine Learning, Automation Design, Data Science, etc. She has published 67 research papers in SCI, Scopus, and Web of Science in topmost journals and published papers in international conferences. She holds 28 granted patents and 10 copyrights in different fields of research. She also has 7 edited and authored books to her name. She has 20+ years of experience in teaching, research, and administration in many Engineering Colleges and Universities. She also worked as a Research Assistant in the Dept of Microelectronics & Embedded Systems at the Asian Institute of Technology (AIT), Bangkok, Thailand, in the year 2016. She served as a nodal officer for NAAC, NBA, QS Ranking, and NIRF ranking, and trained numerous universities and colleges on Outcome-Based Education (OBE). She has received two Best Paper Awards in the field of research work, one in Kuala Lumpur, Malaysia, and another in Pune, Maharashtra, India. Recently, in 2024, she received the Best Paper Trophy at the International Conference on Nailing Start Up Creating Tomorrow, held at Garden College University, Bangalore. She is also serving as a Reviewer and editor in numerous international journals, as well as a Plenary speaker, Invited Speaker, and Guest of honour at various international conferences and workshops. She is also acting as a reviewer in Wiley Publication Books for the Internet of Things. Her name is also added to the top 100 professors by India Prime. She acted as a founding Dean in the Faculty of Information Technology & Engineering at Narayan Singh University, Jamuhar, Sasaram, Bihar worked on 7 pillars to build the foundation.

About **Keynote Speaker**



Dr. Vitalina Babenko

Professor, Dean, Kharkiv National
University of Radio Electronics, Ukraine



Prof. Dr. Vitalina Babenko is the Dean of the Faculty of Electronic and Biomedical Engineering, Kharkiv National University of Radio Electronics (Ukraine), Professor at the Kharkiv National Automobile and Highway University (Part time), Dr. Sci. (habil.) in Economics, Ph.D. in Computer Sciences. She is an Ukrainian National Contact Point of the European Institute of Innovation and Technology, an Expert of the HORIZON-MSCA, M-ERA.NET, an Expert of the Leibniz Competition (Germany), a Member of the Doctoral Academic Councils in Economics, an Expert of the Ministry of Education, the Ukrainian Institute of Scientific-Technical Information, and other national and international scientific associations. She has published around 370 papers in peer-reviewed journals and participated in more than 100 conferences. She is the Editor-in-Chief and a member of the editorial board of 17 scientific journals. Her sphere of scientific interests includes the management of innovation processes, economic-mathematical modeling, information systems and technologies. She specializes in dynamic optimization of managerial processes and statistical modeling.

About **Keynote Speaker**



Mr. Askar Zhussupbekov

Professor, Dean, Eurasian National
University, Kazakhstan



Askar Zhussupbekov was born in 1955 at Agatan, Uralsk prefecture (Kazakhstan). He received his Diploma of Civil Engineering (1977) from Saint-Petersburg State Architectural and Civil Engineering University (SPBGASU), Saint-Petersburg, Russia, and his Dr. Ph. Degree (1985) from SPBGASU, and his Doctor of Science degree (1996) from Karaganda State Technical University (Karaganda, Kazakhstan). He was employed by the Department of Civil Engineering of Karaganda State Industrial University, where he became Head of the Department of Civil Engineering in 1987, and also First vice-rector of this University (1999). In 2000, he was elected as Professor of the Department of Civil Engineering of Eurasian National University (ENU), Astana, Kazakhstan. He was appointed Director of the Geotechnical Institute of ENU, Astana, Kazakhstan (2003). In 2009, Askar Zhussupbekov was elected to the rank of Head of Department of Civil Engineering of ENU. In 2011–2012 he was visiting Professor of Columbia University, New York (USA), and 2012–2013 was as an inviting Professor of Columbia University (New York). The main field of expertise of Askar Zhussupbekov is geotechnical engineering (piling and deep foundations), geomonitoring, undermining soil ground, disaster prevention and reduction, in situ testing. He carries out theoretical and experimental research, as well as consulting work for civil and geotechnical projects at new capital Astana (Kazakhstan), West Kazakhstan (Caspian Sea area), Almaty (old capital of Kazakhstan), Saint-Petersburg, Yuzhno-Sakhalinsk (Russia). He is a scientific consultant on piling works of such projects as the second generation plant and in Tengiz (Caspian Sea coast) and Karabotan, Kashagan (Atyrau), where the clients

About Biography

are PFD company (USA), AGIP (Italy); the International Airport Project in Astana(new capital), the clients are Asian Pacific (Japan) and Alsip Alarko (Turkey); Buildings for the US Embassy, the client is Fluor Caspian Services, Ltd (USA) and other Mega Projects on problematical soil ground of Kazakhstan, like as EXPO 2017, Abu-Dhabi Plaza (Astana). Starting in 2013, Askar Zhussupbekov has been appointed as Chair of TC305 (ISSMGE) “Geotechnical Infrastructure of Mega cities and new capitals”. He organized several workshops at Eurasian National University related to this TC305 activity. He is also an active member of ATC-3, ATC-10, ATC-19, RSSMGE, IALT. Prof. Askar is Past Vice President of ISSMGE for Asia, President of Kazakhstan Geotechnical Society. He has supervised more than 40 Dr. Ph. dissertations and 10 Dr. Engineering dissertations (included foreign students from Japan, Turkey, South Korea, Cambodia, Tajikistan, Mongolia, Russia). Askar Zhussupbekov has extensively traveled to deliver the invited lectures regarding the geotechnical problems with soft soil ground in different universities and companies all over the world. He has published more than 350 scientific papers including 4 books on Geotechnical Engineering. He organized several international geotechnical conferences at Astana (1997, 2000, 2001, 2005), Atyrau, 2003 (Kazakhstan), Saint-Petersburg, 2003 (Russia), Samarkand, 2003 (Uzbekistan), Tokyo, 2003, (Japan), Almaty, 2004 (Kazakhstan), Dushanbe, 2005 (Tajikistan), Yuzhno-Sakhalinsk, 2007 (Russia), Harbin, 2009 (China), Moscow, 2010 (Russia), Hong Kong, 2011 (China), Bandung, 2012 (Indonesia), New York, 2013 (USA), Chennai, 2015 (India), Chengdu, 2018 (China), Incheon, 2018 (South Korea), Florida, 2018 (USA), New York, 2020 (USA) and in other countries.

About Session Speaker



Mr. Giambattista Bufalino

University of Catania, Italy



Giambattista Bufalino is a Senior Researcher in General Education at the University of Catania (Italy). He holds a PhD in Educational Research and Development from the University of Lincoln (United Kingdom) and has carried out research and teaching activities across several European countries. His research interests include educational leadership, intercultural education, sustainability, and innovative pedagogical practices. He is currently Principal Investigator of EDUWALK – Walking as an Educational Practice, a funded research project that explores walking as a transformative and relational pedagogical approach in formal and non-formal learning contexts. He is a recipient of the Italian Pedagogy Prize for his contributions to educational research and practice and is editor of the volume Navigating Learning, Culture, and Identity in Island Education (2025).

About Session Speaker



Dr. Azamat Maksüdünov

Associate Professor, Kyrgyz-Turkish
Manas University, Kyrgyzstan



Dr. Maksüdünov is an educator with over a decade of experience in business academia. He is a full-time Associate Professor in the Department of Management, Faculty of Economics and Administrative Sciences, at Kyrgyz-Turkish Manas University. He serves as an editorial board member of several Web of Science and Scopus-indexed journals, including JEECAR, IJHMA, IJBEM, and STSS. Dr. Maksüdünov has published over 100 academic papers in national and international peer-reviewed journals and conference proceedings. He is a Fulbright Visiting Scholar alumnus (2023–2024) and has received several academic awards, including a Certificate of Honor awarded by the Ministry of Education and Science of the Kyrgyz Republic in December 2021.

About Session Speaker



Dr. Abdul-Kahar Adam

University of Education,
Winneba Ghana



He is a Senior Lecturer at the University of Education, Winneba. Faculty, School of Business, in the Department of Management Sciences. Before then, he lectured at University Colleges namely Jayee University College, BlueCrest University College and Trans African University College. He is the founder and a Lead Consultant of LESCAD Institute. He completed his PhD from the Universiti Teknologi Malaysia, He holds MSc. in Management (UK) – University of South Wales and also MBA in Human Resource Management specialisation (USA) – Newport International University. His educational career started from Tishigu Anglican Primary and then Bagabaga Annex Primary, Bagabaga Junior Secondary School, Business Secondary School (Bisco), Tamale Polytechnic, Cambridge Tutorial College (CTC) – UK, Institute of Professional Managers and Administrators (IPMA) – UK, Institute of Chartered Secretaries and Administrators (ICSA) Foundation Stage – UK, Webmaster at E-Learning Centre – UK and E-Commerce Certificate at Bickenhall College of Computing – UK. He has worked with both national and International non-governmental organisations and attended a lot of workshops which have given him the zeal to think about the society and the people. In his career, he has worked in several capacities, industry wise as a Trainee/ Administrative Assistant, Secretary, Sales Assistant and Advisor, Steward, Station Assistant and Depot Administrator in the UK. He was an Associate member of the Institute of Management Consultancy (IMC) – UK and also was a member of the Joint Council for the Welfare of Immigrants (JCWI) – UK. Most of the companies that he worked with in Ghana are Christian Council of Ghana – CCG (Industrial Attachment), Catholic Relief Services – Ghana Program, and Social Enterprise

About Biography

Development – SEND Ghana. In the United Kingdom, he worked with Select Service and Partner, Moss Bros, AMT Enterprise, Rail Gourmet, and First Great Western. He is the founder and lead Consultant/Director of Learning for Success and Career Development Institute – LESCAD Institute where he trains people in various professional tailored made short courses and also provides professional consultancy services. As a Lecturer, he delivered his lectureship on various subject areas and fields such as Business Administration to include subjects like Business Communication, Business Management, Strategic Management, Database Management, Human Resource Management and Training and Development, Office Practice and Procedures/Administration, Designing, Creating Websites and Hosting Websites, and Business Advocacy. He stood as a Parliamentary Candidate in the 2012 Elections for the Sagnarigu Constituency. He first wrote a book title “The Journey You Are About to Make, Your Dream Your Future.” He authored several academic textbooks sold on Amazon.com.

About Session Speaker



Mr. Mergen Dyussenov

(PhD, NUS – 2019), Astana IT University,
Kazakhstan



Mergen Dyussenov (PhD NUS 2019) has served as an Assistant professor since December 2022, first at the School of Creative Industries, and more recently at the School of Digital Public Administration of Astana IT University, based in Astana, Kazakhstan (full-time). From September 2023 to May 2024, Dr. Mergen completed a Research Fellowship program focused on Digital Pedagogy at University of Illinois Urbana-Champaign, United States. He is a former advisor to the Kazakh Minister of Culture and Sports for anti-corruption policy (2020–2021), and deputy director of the Institute of Management at the Academy of Public Administration under the President of Kazakhstan (2019–2020). Dr. Mergen's research interests lie in areas of University-driven Digital Transformation, Digital Literacy and Skills, and Governance theory and processes across Central Asia, Eurasia and Southeast Asia. In addition to being an author of research publications indexed in Scopus and Web of Science, Dr. Mergen has served as a reviewer and an editorial board member for a number of scientific journals based in Kazakhstan, Singapore, Malaysia, Indonesia, and the US.

About Conference Convenor



Dr. G.P.Ramesh

Professor, Conference Convenor, India



Dr. G.P.Ramesh is a distinguished academician, visionary technologist and ambitious researcher with over 26 years of multifaceted experience spanning higher education, advanced research and industry leadership. His career reflects a seamless integration of academic excellence and technological innovation, positioning him as a transformative force in engineering education and applied research. A dynamic leader and passionate educator, Dr. G.P.Ramesh has served as Professor and Head of Electronics and Communication Engineering at prestigious institutions across India and abroad. He has mentored undergraduate, postgraduate and doctoral scholars, successfully guiding Twenty-Two Ph.D. candidates and nurturing a culture of inquiry and excellence. His academic expertise encompasses artificial intelligence, machine learning, embedded systems, VLSI design and antenna technologies. With more than 125 publications in Scopus-indexed journals, his scholarly influence is evidenced by an H-index of 32 and an i10-index of 70, marking him as a prominent contributor to global research discourse. He has also organized Twelve International and Six National conferences, publishing proceedings with Springer and ensuring global visibility through Scopus and Web of Science. A pioneer in Outcome-Based Education and a strategic advisor for NAAC, NBA and Autonomous frameworks, Dr. G.P.Ramesh continues to shape future-ready engineers and scalable, tech-driven solutions for India and beyond.

About Committee Members

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Dr. Mayco Santaella

Dean, Faculty of Arts, Sunway University, Malaysia

Review Committee

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Dean, Faculty of Business, PERDANA University, Malaysia

Dr. Erdal Firat

Dean & Professor, undefined, IQY Technical University, Australia

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Women Safety Application with Smart Query Assistant

Vaishnavi Chitragar

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Shreya Prashant Patil

Department of Computer Engineering, JSPM's Rajarshi Shahu College of Engineering, Pune, Maharashtra, India

Abstract:

The safety of women is one of the major concerns of the time in the world, and every day one can hear various news of harassment, abuses, and violence. These situations usually trigger various severe incidents such as physical harm, trauma, or a sense of fear and insecurity, hence limiting women's freedom or opportunities. Therefore, by using modern technology, our project targets building intuitive, reliable, and responsive mobile applications that could provide fast support to their users in urgent conditions.

The app is designed with an intuitive interface that allows users to send out alerts, share their live location, and make emergency calls—all with the tap of a finger. For scenarios where it's impossible for the user to take manual action on the app, automatic alerts are triggered to the preselected emergency contacts.

Women's safety is a growing concern across the world, with escalating harassment, abuse, and violence leading to physical harm, psychological trauma, and a life of fear that limits the mobility and opportunities of women. We present an intelligent mobile application that enables quick, reliable, and user-centered emergency responses in the face of this great challenge. The proposed system uses an intuitive interface that can be used by users for sending alerts, real-time location, and making calls in one tap. With the aim of further enhancing responsiveness. Without requiring explicit action on the part of the user, the system automatically detects abnormal behavior to send automatic alerts to pre-registered emergency contacts. The goal is to ensure a strong, proactive, yet accessible safety solution through modern technological capability for ensuring the protection of women in critical situations.

Keywords:

Android, Location, Women's Safety, Query Assistant, Voice Recognition.

CNN Model for Malware Detection

Elshod Khaydarov

Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, Amir Temur Street,
Tashkent, Uzbekistan

Nasrullayev Nurbek Bakhtiyorovich

Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, Amir Temur Street,
Tashkent, Uzbekistan

Abstract:

This article analyzes models, methods and algorithms aimed at detecting and eliminating cyberattacks based on malware and develops the mathematical support for the CNN model for detecting malware. In this study, a CNN model aimed at detecting malware belonging to the Ransomware and Adware classes was studied. A scheme for a malware detection and classification system was proposed. Since CNN models are mainly designed to work with images, the first step in detecting malware belonging to the Ransomware class is to convert the program code or data obtained from its execution into an image. The characteristics of each input and output value of the data were developed. Normalization was performed using activation functions. Also, the specific features of the model for detecting malware belonging to the Ransomware and Adware classes using the CNN model were determined.

Keywords:

Malware, CNN model, Ransomware, Adware, Grayscale, Application Programming Interface, Stride, padding.

Alignment of Secondary ICT Curriculum with TVET Competency Requirements: A UNESCO-Based Comparative Analysis

Munkhzul Shagaikhuu

Lecturer, University of Engineering and Technology, Ulaanbaatar, Mongolia

Tsend-Ayush Batbayar

Head of Department, University of Engineering and Technology, Ulaanbaatar, Mongolia

Bolormaa Dalanbayar

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Abstract:

The increasing demand for digitally skilled graduates has highlighted the need for alignment between ICT curricula, higher education requirements, and labor market expectations. However, significant gaps persist between knowledge-based and competency-based education models. This study presents a comparative analysis of the international BTEC curriculum and the Mongolian general education ICT (MGE) curriculum using a competency-based evaluation framework. A topic-level curriculum mapping matrix was constructed from a structured dataset, and competencies were assessed using a depth-weighted scoring scheme (0–2) aligned with the UNESCO ICT Competency Framework for Teachers. Four quantitative indices were computed: the Competency Coverage Index (CCI), Domain Gap Score (DGS), University Readiness Index (URI), and Workforce Readiness Index (WRI).

The results indicate that the BTEC curriculum achieves full competency coverage ($CCI = 1.00$), while the *EBC* curriculum demonstrates moderate coverage ($CCI = 0.53$). Although the MGE curriculum shows acceptable university readiness ($URI = 0.65$), it exhibits significantly lower workforce readiness ($WRI = 0.40$), primarily due to the absence of industry-oriented competencies. Domain-level analysis reveals critical gaps in the Policy/Industry domain ($DGS = 1.00$) and substantial deficiencies in curriculum structuring and applied learning. Statistical validation confirms that these differences are significant, with a paired-samples t-test showing a large effect size ($d = 1.07$, $p < 0.001$) and ANOVA indicating strong domain-level variation ($\eta^2 = 0.67$).

The findings demonstrate that the gap between the two curricula is primarily driven by differences in depth, cognitive complexity, and application context rather than content presence. The study contributes a robust, reproducible methodology for curriculum evaluation and provides evidence-based recommendations for transitioning toward competency-based, industry-aligned ICT education systems.

Keywords:

ICT curriculum, competency-based education, curriculum alignment, UNESCO ICT-CFT, Bloom's taxonomy, workforce readiness, TVET.

Augmented Reality and Virtual Reality in Gaming: Design Innovation, Immersive Experience, and Industry Transformation

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Abstract:

The way players perceive, move around and communicate is being transformed by augmented reality (AR) and virtual reality (VR) in contemporary video games. In AR, digital aspects are added to the actual surroundings with the help of smartphones or headsets, whereas VR immerses players in completely artificial environments through head-mounted displays, motion tracking, and spatial audio. These advancements support different kinds of player interactions, physical activities, and social gaming that are not limited within the confinements of the traditional screen. This article examines some important concepts like presence, immersion, embodiment and social interaction taken from various studies and business reports. The discussion will also focus on how these concepts affect game mechanics, level design, feedback systems, as well as the general user experience. Besides, it identifies some of the main problems such as cybersickness, expensive equipment, safety issues linked to AR games in certain locations, and privacy concerns associated with monitoring data. In essence, the argument presented in this paper is that AR and VR are holistic environments that call for a people-centric and morally upright attitude.

