

02nd International Conference on Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities **ICESSH-2026**

 **22nd July, 2026**  **Seoul, South Korea**



Organized by: IFERP Academy, India



2nd International Conference on Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities (ICEESSH-2026)

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ICESSH
by IFERP
22 July 2024 | Tiruch. South Korea



IFERP Academy
Higher-Order Research Academy

Conference Theme



“Bridging Disciplines, Building
Sustainable Futures”

Preface

We cordially invite you to attend the 2nd International Conference on Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities (ICESSH-2026) on 22nd July, 2026. The main objective of ICESSH-2026 is to provide a platform for researchers, students, academicians as well as industrial professionals from all over the world to present their research results and development activities in relevant fields of Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities. This conference will provide opportunities for the delegates to exchange new ideas and experience face to face, to establish business or research relationship and to find global partners for future collaboration.

These proceedings collect the up-to-date, comprehensive and worldwide state-of-art knowledge on cutting edge development of academia as well as industries. All accepted papers were subjected to strict peer-reviewing by a panel of expert referees. The papers have been selected for these proceedings because of their quality and the relevance to the conference. We hope these proceedings will not only provide the readers a broad overview of the latest research results but also will provide the readers a valuable summary and reference in these fields.

The conference is supported by many universities, research institutes and colleges. Many professors played an important role in the successful holding of the conference, so we would like to take this opportunity to express our sincere gratitude and highest respects to them. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra help in there view process, and to the authors for contributing their research result to the conference.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of ICESSH-2026. We would like to thank the keynote and individual speakers and all participating authors for their hard work and time. We also sincerely appreciate the work by the technical program committee and all reviewers, whose contributions made this conference possible. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hard work.

About ICEESSH - 2026

The 2nd International Conference on Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities (ICEESSH-2026), organized by IFERP Academy, happening on July 22nd, 2026, in Virtual (Live on Zoom) invites you to engage in dynamic discussions around "Bridging Disciplines, Building Sustainable Futures". Join us for a collaborative experience that promotes knowledge exchange and interdisciplinary partnerships to tackle global challenges.

Purpose

The conference seeks to explore how different disciplines can contribute to social betterment. Through the exchange of ideas, the event will examine how engineering, education, social science, and humanities can intersect to create more sustainable, equitable, and prosperous

Promote Global Collaboration The conference aims to create a platform for international collaboration, bringing together professionals and academics from various disciplines to share insights and work towards societal progress.

Conference Theme

Theme: "Bridging Disciplines, Building Sustainable Futures".

Conference Objectives

The primary mission of ICEESSH 2026 is to foster interdisciplinary scholarship and innovation in language, literature, cultural heritage, and education. Key objectives include:

- **Promoting Academic Excellence:** Encouraging high-quality research in language, literature, cultural heritage, and pedagogy.
- **Fostering Interdisciplinary Collaboration:** Creating meaningful dialogue between researchers, educators, and cultural practitioners.
- **Advancing Cultural Preservation & Sustainability:** Supporting initiatives that safeguard intangible heritage and promote sustainable cultural practices.
- **Empowering Inclusive Education:** Exploring innovative teaching methods, cross-cultural pedagogy, and digital learning solutions.
- **Encouraging Policy & Societal Impact:** Discussing evidence-based policies and frameworks to enhance education and cultural preservation globally.

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.

- **Global Community Building:** IFERP exerts a lot of effort in building new communities all over the world. As community organizers, we control the conversations & inculcate passion for innovation amongst diverse groups.
- **Promoting Innovation Schemes:** IFERP has several schemes for students, professionals, researchers & organizations to being distinct innovators across all technology streams & sub disciplines.
- **Publicizing Research Publication:** Publication of research is the crucial aspect of IFERP's activities. IFERP also serves as a support center for early - career researchers aspiring to publish world-class research papers.
- **Our Origin:** Established by the Technoarete Research & Development Association (TRADA), IFERP was meant to serve as an accelerant for technological innovation worldwide.
- **Facilitating Multi-Disciplinary Collaborations:** IFERP encourages networking & collaborative partnerships on all fronts to result in a diverse collaborative atmosphere to gain abundance knowledge.
- **Access To Critical Funding & Resources:** IFERP has dedicated itself to fund for various efficient projects & activities to make it achieve successful outcomes beyond just meeting expectations.

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.

IFERP Mission & Vision

IFERP's Mission: Upskilling the knowledge hub through technological innovation & excellence for the benefit of humanity.

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

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

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

Managing Director, IFERP



Mr. A. Siddh Kumar Chhajer

Managing Director & Founder, IFERP
Technoarete Group, India



Message:

On behalf of IFERP & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the 2nd International Conference on Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities (ICESSH-2026) is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in various fields of academics. This conference creates solutions in different ways and to share innovative ideas in the field of Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities. ICESSH-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.

ICESSH-2026 will explore the new horizons of innovations from distinguished researchers, scientists and eminent authors in academia and industry working for the advancements in Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities from all over the world. ICESSH-2026 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in various fields of Academics.

Chief Executive Officer, IFERP



Mr. Rudra Bhanu Satpathy

Chief Executive Officer & Founder, IFERP
Technoarete Group, India



Message:

IFERP is hosting the 2nd International Conference on Cross-Disciplinary Insights: Engineering, Higher Education, Social Science and Humanities (ICEESSH-2026) this year in month of July. The main objective of ICEESSH-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.



Plenary Keynote Speaker



Dr. Prasenjit Chakrabarty

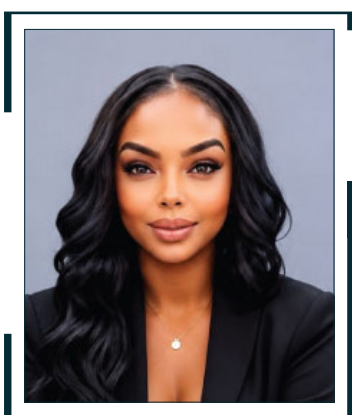
Assistant Professor
School of Management Studies
Techno Main Salt Lake, Kolkata, India



Biography:

Dr. Prasenjit Chakrabarty is a Marketing Analytics researcher and thought leader specializing in Digital Marketing, SaaS Go-to-Market Strategy, Consumer Analytics, and AI applications in business. With 27+ publications across high-impact, Scopus-indexed journals – including 10+ papers within an 18-month span – his research is grounded in rigorous quantitative methods such as PLS-SEM and statistical modeling. He serves as a peer reviewer for leading journals including the Journal of Retailing & Consumer Services (Q1, Elsevier) and Electronic Commerce Research (Q1), and his work has been featured in The Times of India. He is also Founder & CEO of Parallox Software Pvt Ltd, driving analytics-led growth strategies for SaaS and EdTech startups across India. A management faculty member at Techno Main Salt Lake (affiliated to MAKAUT-WB), he teaches marketing analytics and operations management to over 2,000 MBA students, and has previously served as Visiting Faculty at IMI Kolkata, delivering entrepreneurship and innovation modules. Before academia, he held senior P&L leadership roles at Beam Suntory, Carlsberg India, Berger Paints, and Asian Paints, spearheading large-scale digital transformation (SAP S/4HANA, IoT) across teams of 800+. His contributions have been recognized with the Yatte Minahare Award (Suntory, Japan), the Best Paper Track Award at MICA (ICMS), and a Jury's Special Mention Award at ISDSI (IMI Kolkata). A Lifetime Fellow of the Institute of Directors, he recently served as a jury member for Google Developers' Prompt War competition (H2S) in Kolkata.

Plenary Keynote Speaker



Dr. Tameka Pierre-Louis

Deputy Chief Academic Officer
USA

Biography:

Dr. Tameka Pierre-Louis, Ed.D., is Deputy Chief Academic Officer of Innovation & Integration for Career and Technical Education, STEM, and Financial Literacy at the Academy Charter School network on Long Island, New York, where she leads programming serving more than 4,000 students across seven campuses. A former Fellow at Harvard and Yale Executive Leadership programs, she is an internationally recognized innovator at the intersection of workforce development, STEM literacy, and equitable career pathways. As a former vocational high school principal, she achieved a 98% graduation rate during the COVID-19 pandemic. Her model CTE program has been recognized by the State University of New York Charter Schools Institute. Dr. Pierre-Louis is also the recipient of the Queens Borough President's Citation, presented by former Borough President Melinda Katz, honoring her advocacy and leadership in expanding Career and Technical Education across one of the world's most culturally diverse urban communities. In that capacity, she served as Co-Chair of the Jamaica Now Leadership Council, overseeing a \$153 million public investment across 26 strategic initiatives to improve quality of life in Downtown Jamaica, Queens – advancing economic development, strengthening transportation infrastructure, supporting small business growth, and expanding student access to STEM and CTE programs across 300 local high schools. She has also championed digital equity by promoting Google's Code-In Initiative through the Queens Public Library, serving 2.3 million residents representing more than 100 nationalities and 150 languages. Her current research explores the transformative potential of artificial intelligence in designing innovative, inclusive curricula for neurodiverse learners – advancing project-based learning models across Career and Technical Education and STEM that will equip students with the knowledge, skills, and competencies required to thrive in an evolving global workforce.

Plenary Keynote Speaker



Dr. Seyed Fathollah Mir Mohammadmakki

Founder of Mctough Group & Chairman of
Mctough Day Rad – Distribution
Import & Export Medicine Company &
Investment Company, Iran



Biography:

Dr. Seyed Fathollah Mir Mohammadmakki is an entrepreneur, researcher, and healthcare industry professional based in Iran. He is the Founder of Mctough Group and Chairman of Mctough Day Rad, a company active in pharmaceutical distribution, import/export, and investment. He holds an MPH degree in Industrial Engineering from Amirkabir University of Technology (AUT) and has participated in scientific projects related to the pharmaceutical and food industries, AHP-based decision-making methodologies, public health, and sustainability. His research has been published in scientific journals and presented at specialized conferences. Dr. Mir Mohammadmakki is also active in international trade, scientific research, and healthcare business development, with collaborations in the fields of medical sciences, food safety, and health-related studies.

Invited Keynote Speaker



Prof. Phillip J. Richardson

International Entrepreneurship
Canadore College
CEO, Black Opal Property Advisors Inc, Canada



Biography:

Professor Phillip Richardson is a distinguished educator, keynote speaker, and co-author with over four decades of global experience in leadership development, international entrepreneurship, and mixed-use innovation. He served as a Professor of International Entrepreneurship at Canadore College for fourteen years and as a visiting professor at Shenzhen University. Professor Phillip is dedicated to empowering the next generation of business leaders through engaging instruction, mentorship, and practical global insights. He is a sought-after international speaker and presenter, having delivered keynote addresses and academic papers on global development, neuroscience in design, and resilience leadership, including at the Université de Paris International Conference on Global Innovation in Architecture and Engineering. A prolific writer, Professor Phillip has co-authored several influential publications, including: *Winning On and Off the Track: Ferrari's Business Model*; *Design Plasticity* – a groundbreaking paper linking neuroscience and design thinking; *Vertical Villages: The Magic of Mixed-Use Developments*, inspired by his leadership in some of the world's most important projects; *Tough Resiliency, Smart Agility* (2024), for individuals and organizations; *Funny/Not Funny! Humanity's Risk Register* (2025, upcoming), addressing global existential challenges with practical and accessible solutions. Professor Phillip's work bridges theory and practice, from the classroom to the boardroom, across continents. Through his speaking engagements and educational initiatives, he continues to inspire innovation, ethical leadership, and global collaboration.

Invited Keynote Speaker



Danielle Papillon-Richardson CSM

Founder
Black Opal Property Advisors Inc.
Canada



Biography:

Danielle Papillon-Richardson, PRP, PDU, is a seasoned corporate educator, keynote speaker, and published author with over 20 years of experience in leadership facilitation, adult coaching, and corporate training. Fully bilingual in French and English, she has empowered over 6,500 professionals through customized training programs delivered across government, private, and academic sectors. Danielle has designed and facilitated high-impact workshops in software training, project management, technical writing, public speaking, and soft skills development. Her expertise includes program development, policy and procedure design, strategic consulting, and end-user documentation. Known for her engaging delivery and practical insights, she was invited to speak at the Université de Paris in 2017 on personal resilience and leadership. A graduate of Algonquin College in Business Administration and Retail Marketing, she also studied Journalism at Carleton University, where she developed a strong foundation in communication and storytelling—skills that continue to shape her dynamic teaching style. She is the founder of Black Opal Property Advisory's education division, where she leads initiatives in customized corporate training, leadership development, and professional growth. Her workshops are trusted by Fortune 500 companies, government agencies, post-secondary institutions, and industry leaders. Her published works include: *Funny/Not Funny! Humanity's Risk Register* (2025, upcoming); *Tough Resiliency, Smart Agility*; *Vertical Villages: The Magic of Mixed-Use Development*; and *Negotiate Your Adversary into Your Ally*. With a unique blend of strategy, empathy, and humour, Danielle continues to inspire growth and transformation in every audience she serves.

Keynote Speaker



Prof. U. G. Samudrika Wijayapala

University of Moratuwa
Sri Lanka



Biography:

Professor U. G. Samudrika Wijayapala is a senior academic and researcher in Textile and Apparel Engineering at the University of Moratuwa, Sri Lanka. She holds a PhD in Textile Engineering and is a Chartered Engineer, with an academic career spanning more than 30 years. Her research portfolio is strongly aligned with sustainable and functional textile innovations, with significant contributions in natural dye development, green processing technologies, and value-added textile applications. Her scholarly work includes numerous peer-reviewed journal publications, books, book chapters, and international conference contributions, particularly in advancing eco-friendly solutions for the textile industry. Professor Wijayapala has received multiple Awards of Excellence with Distinction for outstanding research performance over several consecutive years. She has also held key academic leadership positions, including Head of the Department of Textile and Apparel Engineering, and has contributed extensively to national policy, curriculum development, and industry capacity-building initiatives. With extensive academic and industry engagement spanning over two decades, she currently serves as a Professor and has previously held the position of Head of the Department. Her contributions extend to national-level initiatives, including serving as a Board Member of the Sri Lanka Institute of Textile and Apparel (SLITA) and participating in policy and standards development through institutions such as NAITA, SLSI, and the Central Environmental Authority. Her work exemplifies interdisciplinary integration across engineering, environmental science, and societal development, making her a strong advocate for global collaboration in addressing contemporary industrial and sustainability challenges.

Keynote Speaker



Mr. Patrick Ho

Director, NexxAi
Singapore

Biography:

Patrick Ho is a seasoned professional in education management, digital technologies, and global business growth, with over 17 years of experience across the Asia-Pacific region. He has held several senior leadership roles, including CEO of Kaplan Southeast Asia, Managing Director of KnowledgeHut Asia Pacific, and CEO of SMF School of Management. Currently associated with NexxAi, he focuses on advancing innovation through emerging technologies such as Agentic AI, while also contributing to IT, marketing, and educational consulting. Patrick has a strong academic background, having studied at the National University of Singapore and Cranfield University, UK. He is also certified in AI Engineering by Microsoft. Known for his strategic vision and leadership, he has played a key role in driving international collaborations, executive education, and digital transformation initiatives. His expertise spans education innovation, technology integration, and organizational growth on a global scale.

Keynote Speaker



Dr. Siddharth Singh Yadav

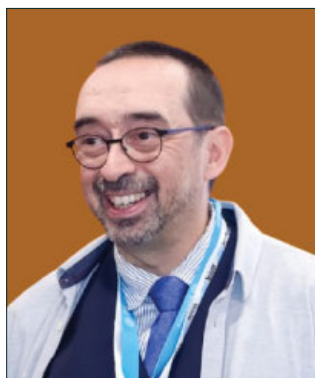
BISTOS Co., Ltd.,
South Korea



Biography:

Dr. Siddharth Singh Yadav is a Research Engineer (Ph.D.) at BISTOS Co., Ltd., South Korea, specializing in microfluidics, computational fluid dynamics (CFD), biomedical devices, and blood image processing. He earned his Ph.D. in Mechanical and Automation Engineering with a focus on biomedical device development from Amity University, Noida. With over eight years of academic and research experience, he has served as an Assistant Professor and contributed significantly to interdisciplinary research in healthcare technology. His work primarily focuses on developing low-cost, portable diagnostic devices for disease screening using the physical properties of blood, aiming to improve healthcare accessibility in resource-limited settings. He has published several research papers in reputed international journals and conferences and holds a patent in microfluidic-based disease screening systems. Dr. Yadav has also led multiple government-funded projects and actively contributed to innovation and incubation initiatives in engineering and biomedical research.

Session Speaker



Prof. Dr. Daniel Burgos

MIU City University Miami, USA
Universidad Internacional de La Rioja (UNIR)
Spain



Biography:

Daniel Burgos serves as President/Rector of MIU City University Miami (USA) and Vice-Rector for International Research at Universidad Internacional de La Rioja (UNIR), where he is also a Full Professor. He holds a UNESCO Chair in eLearning and is the Director of the Research Institute for Innovation & Technology in Education (UNIR iTED). He has led more than 80 European and global R&D projects and has published over 270 scientific papers, 80 books and special issues, and holds 12 patents. He has earned 14 PhD degrees, including in Computer Science and Education. He also works as a consultant for organizations such as the United Nations (UNECE), United Nations University (UNU-Flores), ICESCO, the European Commission and Parliament, and the Russian Academy of Sciences. His research interests focus on Educational Technology and Innovation, particularly their practical applications in areas such as Artificial Intelligence and Games.

Session Speaker



Dr. Chirag Joshi

Assistant Professor
Manipal University Jaipur
India



Biography:

Dr. Chirag Joshi is an accomplished academic and researcher specializing in computer science, with a strong focus on machine learning and cybersecurity. He currently serves as an Assistant Professor (Selection Grade) in the Department of Data Science and Engineering at Manipal University Jaipur. With over a decade of teaching experience across reputed institutions in India, including DIT University Dehradun and Marwadi University Rajkot, he has contributed significantly to higher education and research. Dr. Joshi earned his Ph.D. in Computer Science and Engineering from DIT University, where his research centered on botnet detection using machine learning techniques. His scholarly output includes numerous high-impact journal publications, conference papers, and book chapters, particularly in areas such as deep learning, cryptography, and intrusion detection systems. He has also been involved in patented innovations and interdisciplinary research projects. In addition to his academic pursuits, he actively contributes to curriculum development, academic coordination, and professional training programs. His technical expertise spans programming, data science, and advanced computing tools, making him a well-rounded educator and researcher.

Session Speaker



Dr. Asmalina Binti Mohamed Saat

Senior Lecturer
Universiti Kuala Lumpur
Malaysia



Biography:

Dr. Asmalina Binti Mohamed Saat is a Senior Lecturer at Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET), specializing in materials engineering and sustainable technologies for the maritime sector. She holds a PhD in Materials Engineering (polymer nanocomposites) from Universiti Malaya as well as an MSc and BEng in Materials/Mineral Resources Engineering from Universiti Sains Malaysia, and has more than 15 years of teaching experience in materials, strength of materials, and marine-related engineering subjects at diploma, bachelor, and postgraduate levels. Her scholarly work spans material characterization, anti-corrosion and antifouling coatings, composite and nanocomposite development, and environmental technology analysis, with publications indexed in major databases such as Web of Science, Scopus, and Google Scholar. In line with emerging global priorities, her academic and advisory roles increasingly engage with policy frameworks that support a sustainable future for marine industries, particularly through research and postgraduate training that link green materials, marine environmental protection, and regulatory best practices. Building on extensive experience as program coordinator for maritime engineering postgraduate programmes, ISO 9001 internal auditor and team leader, and committee member for research and program development, she actively contributes to shaping institutional strategies and guidelines that foster sustainability-oriented innovation in the marine and offshore sectors.

Session Speaker



Assoc. Prof. Dr. Adeline Ng Ling Ying

Associate Professor & Deputy Head of School
Swinburne University of Technology
Malaysia

Biography:

Dr. Adeline L.Y. Ng is an Associate Professor and Deputy Head of School in the Faculty of Engineering, Computing and Science at Swinburne University of Technology. She holds a PhD in Civil Engineering from Oxford Brookes University and has over 20 years of combined academic, research, and professional engineering experience. She is a Professional Engineer with a Practicing Certificate registered with the Board of Engineers Malaysia, an ASEAN Chartered Professional Engineer, and a Fellow of the Higher Education Academy. Her research spans experimental and analytical studies of cold-formed steel members and connections, post-installed anchors, timber-steel composites, and hybrid and technology-enhanced learning in engineering education, with publications in leading international journals and indexed conference proceedings. Dr. Ng is actively involved in postgraduate supervision and leads national and institutionally funded research projects. She also serves as a journal reviewer, an external thesis examiner, and a member of international technical committees. Her academic leadership experience includes serving as Associate Dean (Academic Practice) and chairing key learning, teaching, and quality committees. Through these roles, she advances curriculum innovation and research-led teaching, while engaging in industry consultancy and STEM outreach to strengthen the link between engineering education, professional practice, and societal impact.

Session Speaker



Assoc. Prof. Dr. Subuh Anggoro

Associate Professor
Universitas Muhammadiyah Purwokerto (UMP)
Indonesia

Biography:

Subuh Anggoro earned his Ph.D. and M.Ed. in Elementary Education from Universitas Pendidikan Indonesia (UPI). He is currently an Associate Professor and Head of the Elementary Education Master's Department at the Postgraduate Program of Universitas Muhammadiyah Purwokerto (UMP). He is dedicated to improving the quality of teaching and learning across both school and higher education environments. He is a life member of the Society for Research Development (SRD) and has served as Chairman of the International Conference on Social Science (ICONESS) in 2021, 2023, and 2025. He was the Editor-in-Chief of *Dinamika Jurnal Ilmiah Pendidikan Dasar* from 2019 to 2024 and continues to contribute as an editor and reviewer for several reputed international journals. His research interests include teacher education, science education, higher education, 21st-century learning, school-based assessment, classroom research, and youth education. He also holds 20 intellectual property rights.

Session Speaker



Dr. M. Mujiya Ulkhaq

Assistant Professor
Diponegoro University
Indonesia

Biography:

M. Mujiya Ulkhaq, Ph.D., is an Assistant Professor in the Department of Industrial Engineering at Diponegoro University, Semarang, Indonesia. He obtained his Ph.D. in Analytics for Economics and Management from the University of Brescia, Italy, and holds a Master's degree in Engineering Management from Jönköping University, Sweden. His research interests include performance measurement, particularly in the education sector, service quality measurement, and data analytics. He has contributed to various publications in reputed journals and conferences, focusing on applying analytical and data-driven methods to solve practical problems. His work emphasizes improving organizational performance, efficiency, and decision-making processes through quantitative approaches. In addition to his research contributions, he is actively engaged in teaching and mentoring students in industrial engineering. His academic efforts aim to promote innovative thinking and the application of engineering and management principles to address contemporary challenges in industry and education.

Session Chair



Dr. Prasenjit Chakrabarty

Assistant Professor
School of Management Studies
Techno Main Salt Lake, Kolkata, India

Biography:

Dr. Prasenjit Chakrabarty is a Marketing Analytics researcher and thought leader specializing in Digital Marketing, SaaS Go-to-Market Strategy, Consumer Analytics, and AI applications in business. With 27+ publications across high-impact, Scopus-indexed journals – including 10+ papers within an 18-month span – his research is grounded in rigorous quantitative methods such as PLS-SEM and statistical modeling. He serves as a peer reviewer for leading journals including the Journal of Retailing & Consumer Services (Q1, Elsevier) and Electronic Commerce Research (Q1), and his work has been featured in The Times of India. He is also Founder & CEO of Parallox Software Pvt Ltd, driving analytics-led growth strategies for SaaS and EdTech startups across India. A management faculty member at Techno Main Salt Lake (affiliated to MAKAUT-WB), he teaches marketing analytics and operations management to over 2,000 MBA students, and has previously served as Visiting Faculty at IMI Kolkata, delivering entrepreneurship and innovation modules. Before academia, he held senior P&L leadership roles at Beam Suntory, Carlsberg India, Berger Paints, and Asian Paints, spearheading large-scale digital transformation (SAP S/4HANA, IoT) across teams of 800+. His contributions have been recognized with the Yatte Minahare Award (Suntory, Japan), the Best Paper Track Award at MICA (ICMS), and a Jury's Special Mention Award at ISDSI (IMI Kolkata). A Lifetime Fellow of the Institute of Directors, he recently served as a jury member for Google Developers' Prompt War competition (H2S) in Kolkata.

Conference Convenor



Prof. Dr. G. P. Ramesh

Conference Convenor
India



Biography:

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, he 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.

Committee Members

Organizing Committee Members

Conference Chair

Dr. Sungwoo Rhee

President
KCTI Korea Convergence Tourism Institute
South Korea

Conference Co-Chair

Dr. Usama A. Nassar

Professor
Dean of Faculty of Engineering,
Suez Canal University, Egypt

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Universitas Padjadjaran, Indonesia

Dr. Siddharth Singh Yadav

Researcher
Research and Development
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Professor & Principal
Army Institute of Hotel Management & Catering Technology
India

Mr. Anar Rzayev

IT Director
Estimator MMC, Azerbaijan

Dr. Kalyanapu Srinivas

Professor
Department of Computer Science and Engineering
(Data Science)
Vaagdevi Engineering College, India

Dr. Evelyn M. Baesa

Assistant Professor
College of Computing Multimedia Studies
Camarines Norte State College, Philippines

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FinOps-Driven Auto-Scaling: A Reinforcement Learning Framework for Dynamic Multi-Cloud Cost Optimization

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Abstract

Enterprise cloud spending often rises due to over-provisioning, reactive scaling logic, and unclear pricing. These issues become even more pronounced in multi-cloud environments, where compute costs, egress fees, and commitment structures differ significantly across providers and availability zones. Traditional threshold-based Autoscalers react solely to utilization signals. In contrast, predictive controllers use workload forecasts but still overlook the financial aspects of placement and migration decisions. As a result, neither method can effectively optimize compute spending, service-level compliance, and commitment utilization, creating a gap between infrastructure management and financial accountability. This paper introduces FinOps-RL, a reinforcement learning framework designed to bridge this gap. It formalizes multi-cloud auto-scaling as a Markov Decision Process, treating economic variables as essential control inputs alongside operational telemetry.

The FinOps-RL agent monitors CPU utilization, memory occupancy, request arrival rates, latency deviations, on-demand and spot prices per zone, and remaining savings-plan commitment capacity at each decision point. With this comprehensive state representation, the agent learns a Proximal Policy Optimization policy. Its reward function penalizes direct compute and egress costs, service-level objective violations through a nonlinear latency-breach term, and oscillatory scaling churn.

I trained and evaluated the policy on a simulated 72-hour hybrid workload that included AWS Elastic Kubernetes Service and Google Kubernetes Engine, featuring a microservices-based e-commerce application subject to daily traffic fluctuations and occasional flash-sale demand spikes. Compared to a static CPU-threshold Autoscaler and a history-based predictive Autoscaler, FinOps-RL cuts total infrastructure spending by 40.7% and 25.2%, respectively. It also achieves the lowest service-level violation rate at 0.9% and the highest average resource utilization at 81.3%. These findings show that integrating financial awareness into the scaling policy is both practical and significantly advantageous for enterprise cloud governance.

Keywords

FinOps, reinforcement learning, multi-cloud, auto-scaling, Proximal Policy Optimization, cost optimization, SLA compliance, Markov Decision Process.

Dynamics of C-Reactive Protein and Oxygen Saturation in the Early Postoperative Period Following Septoplasty

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Abstract

Introduction: The early postoperative period after septoplasty is accompanied by a systemic and local inflammatory reaction, mucosal edema, temporary impairment of nasal breathing, and changes in the patient's general functional state. In the clinical assessment of this period, it is important to consider not only local signs of inflammation but also integral indicators that reflect the severity of the acute phase and the quality of respiratory function recovery. C-reactive protein (CRP) is a sensitive marker of the acute inflammatory phase, while oxygen saturation (SpO₂) allows for an indirect assessment of the impact of nasal obstruction and postoperative edema on respiratory comfort. Unlike studies focused solely on TNF- α , microflora, or complication rates, a combined analysis of CRP and SpO₂ allows early rehabilitation after septoplasty to be viewed as a clinical and laboratory process in which the reduction of inflammation must be accompanied by the restoration of respiratory function.

Objective: To evaluate the dynamics of C-reactive protein and oxygen saturation in patients after septoplasty under traditional and modified postoperative management protocols.

Materials and Methods: A comparative analysis was conducted on 100 patients following endoscopic septoplasty, who were divided into two groups of 50 people each. The first group received a traditional intranasal splint and standard postoperative management. The second group underwent a comprehensive rehabilitation approach, which included a modified intranasal splint with a central removable airway and dexpanthenol as a stimulant for mucosal regeneration. Additionally, the parameters were compared with a control group of 20 healthy individuals. CRP concentration was measured in mg/L, and SpO₂ in percent. The main follow-up points were the 1st, 5th, and 10th days postoperatively. The analysis was comparative and dynamic in nature, with a clinical interpretation of the absolute differences between the groups.

Results: On day 1 post-surgery, CRP levels were sharply elevated in both clinical groups: 45.0 ± 6.0 mg/l in group 1 and 43.0 ± 5.5 mg/l in group 2, whereas in the control group, the level was 4.5 ± 1.2 mg/l. This confirms that surgical trauma is the leading factor on the first day, while the differences between postoperative management approaches are still only moderately pronounced. By day 5, CRP had decreased to 27.0 ± 4.5 mg/l in group 1 and 19.0 ± 3.8 mg/l in group 2, indicating a more rapid decline of the acute inflammatory phase with comprehensive rehabilitation. By day 10, the indicator reached 10.0 ± 2.5 mg/l in group 1 and 5.0 ± 1.5 mg/l in group 2; that is, in group 2, it approached values characteristic of low inflammatory activity.

The SpO₂ dynamics also indicated a more favorable recovery in Group 2. On day 1, saturation was approximately $90 \pm 3\%$ in Group 1 and $93 \pm 2\%$ in Group 2, compared to a control level of approximately $97 \pm 1\%$. By day 5, these values had increased to $93 \pm 3\%$ and $95 \pm 2\%$, respectively, and by day 10, they reached $95 \pm 2\%$ in Group 1 and $97 \pm 2\%$ in Group 2. Thus, in Group 2, SpO₂ recovery was faster, reaching levels nearly consistent with the control values by day 10. These findings can be explained by the fact that the central removable airway facilitates nasal cavity clearance, reduces secretion buildup, and maintains partial patency of the nasal passages, while dexpanthenol promotes mucosal repair. Together, these factors reduce the intensity of the inflammatory response and improve the functional conditions for nasal breathing.

Conclusions: 1) CRP and SpO₂ are complementary indicators of early postoperative rehabilitation after septoplasty: the former reflects the severity of the acute inflammatory phase, while the latter reflects the functional recovery of breathing comfort. 2) On the first day after surgery, CRP was elevated in both groups due to surgical trauma. 3) By the 5th and especially by the 10th day, a more pronounced decrease in CRP was observed in group 2: 5.0 ± 1.5 mg/l versus 10.0 ± 2.5 mg/l in group 1. 4) SpO₂ recovery in group 2 was faster, reaching $97 \pm 2\%$ by the 10th day, which corresponds to the control level. 5) The combined use of a modified splint with a central removable airway and dexpanthenol can be considered a justified approach to reducing the inflammatory burden and accelerating functional recovery after septoplasty.

Strategic Economic Solutions for Sustainable Olympic Hosting: Lessons from Historical Cost Overruns and Legacy Outcomes

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Abstract

Background: The Olympic Games represent a global celebration of sportsmanship and unity among nations. Over the years, hosting this prestigious event has become increasingly challenging due to financial, social, and political complexities. Many cities view it as an opportunity to gain international visibility, boost the economy, and improve urban infrastructure.

Methods: This research employs a qualitative method, including case studies and comparative evaluations, to examine the economic and social effects of organizing the Olympics. Data were gathered through interviews with relevant stakeholders and reviews of historical documents, scholarly articles, and reports from the International Olympic Committee. The study highlights aspects such as infrastructure improvements, revenue allocation, and sustainable hosting practices.

Results: The findings indicate that hosting the Olympics is frequently associated with substantial budget overruns, averaging 150%. For instance, the 2014 Sochi Olympics exceeded their budget by 289%, while the 2016 Rio Games surpassed it by 352%. Key contributing factors include high infrastructure costs, security measures, and inefficient financial management. While short-term benefits, such as increased tourism and job creation, are often highlighted, they are often overestimated, leaving host cities with minimal long-term economic advantages. Emotional benefits, such as fostering national pride and unity, are significant but insufficient to offset the financial drawbacks.

Conclusion: Adopting sustainable practices, such as reusing existing facilities and promoting financial accountability, is crucial for minimizing risks. Integrating the Olympics with broader development goals and exploring alternative hosting models can make the event more inclusive, feasible, and enduring.

Keywords

Olympics, Sustainability, Budget overruns, Infrastructure, Economic impact.

Buffering Students' Resilience to Aggression: Mediation and Moderation of Teachers' Professionalism

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Abstract

The study explored the complicated structural relationship between university students' internal psychological resilience and the display of aggressive behaviors in higher education ecosystems, including the dual mediation and moderation effect of teachers' professionalism, conducted with a specific emphasis on it. The quantitative empirical data collection was done by using cross sectional survey with 235 post graduate (MPhil and PhD) students of public sector universities in Punjab, Pakistan. Validating instruments and integrity of structures was carried out with rigorous Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The results of advanced path analysis through the structural equation modeling (SEM) and Hayes process macro mediation and moderation estimation supported that university students' initial psychological resilience as an internal shield plays important in reducing the emergence of aggressive behavior. This protective pathway is optimised and reinforced when there is high teacher professionalism as an external institutional buffer. The conditional interaction term (USR\TP) was very significant, accounting for an additional 3.5% unique variance in aggressive behaviors suppression. Demographic analysis showed that male postgraduates scored significant higher mean scores for manifest aggressive behavior than female postgraduates while advanced PhD research scholars had significantly higher mean score in psychological resilience and lower mean score of aggressive behavior than MPhil postgraduates. The results provide valuable, evidence-based knowledge to university administrations to incorporate structured stress management practices, specific guidance and counseling centers, and project-based learning approaches into university systems that will proactively foster safer, more harmonious university environments.

Keywords

Aggressive Behaviour, Student Resilience, Teachers' Professionalism, Cross-Sectional Survey, Hayes Process Macro Mediation and Moderation Models, Institutional Buffers.

Streamlining Research Management: Development, Implementation and Evaluation of BUCS Research Document Management System

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Abstract

Research-related documents are growing in the higher education institutions which calls for an efficient and secure digital management systems to enhance research productivity, data accessibility, and institutional reporting. This study aimed to develop, evaluate and formulate policies on the implementation of the BUCS Research Document Management System (BUCS-RDMS), a digital platform that provides an efficient management for research documents. The existing process was analyzed through interviews and focus group discussion with faculty members, researcher coordinators, and students to identify user requirements. The Rapid Application Development (RAD) methodology was utilized which allows iterative design, user feedback integration and faster development. The system provides centralized management of faculty and student research projects, proposal submissions, publications, conference presentations, trainings, and intellectual property records. It serves as a secure repository for research outputs and offers real-time dashboards that visualize key performance indicators and monitor research accomplishments against institutional targets. Pilot testing and system evaluation was conducted using the ISO/IEC 25010 software quality model and involved faculty members, students, and the Data Protection Officer to ensure compliance with data privacy requirements. The results indicated that the system significantly reduced document loss, improved accessibility and accuracy of research records, and enhanced the efficiency of reporting and monitoring processes compared with manual processes. Supporting policies and implementation guidelines were formulated and user orientation were conducted to ensure sustainable adoption. BUCS-RDMS is currently deployed on a dedicated server with cloud-based backup, and demonstrates potential digital solutions to strengthen research, and institutional knowledge management in higher education institutions.

A Systematic and Critical Review of Web Application Vulnerability Assessment and Reconnaissance: Techniques, Tools, and Challenges

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Abstract

The increasing reliance on web applications for critical services has significantly expanded the attack surface for cyber threats. Vulnerabilities such as SQL Injection, Cross-Site Scripting (XSS), and misconfigurations continue to pose serious risks to data security and system integrity. This paper presents a **systematic review** of reconnaissance techniques, vulnerability assessment methodologies, and penetration testing approaches, with a particular focus on open-source tools. A structured review methodology was employed to analyze selected research papers based on predefined inclusion and exclusion criteria. The study categorizes existing approaches into reconnaissance, vulnerability detection, and exploitation phases, and evaluates tools such as Nmap, Burp Suite, and automated scanners. A detailed comparative and critical analysis highlights the strengths, limitations, and applicability of each approach. Furthermore, this review identifies key research gaps, including the lack of integration among tools, insufficient automation, and limited real-time capabilities. The findings emphasize the need for unified and intelligent security frameworks to enhance web application security. This paper contributes to the field by providing a comprehensive taxonomy and critical insights for researchers and practitioners.

Keywords

Cybersecurity, Systematic Review, Vulnerability Assessment, Reconnaissance, Web Application Security, Penetration Testing, Nmap, SAST, DAST.

The Prospects of Democracy in the Era of Digital Information and Artificial Intelligence

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Abstract

The growing utilization of Artificial Intelligence (AI) has transformed political communication. AI has created both unexpected possibilities and problems for democratic systems. Algorithms, automated bots, deepfakes, and micro-targeted political ads are some of the examples of AI-run features that make it easy to quickly propagate propaganda, dubious information, and fake news in the same way they have forced the people to perceive, understand, and respond to such information in a particular way. Although these technologies help to reach a larger population, by which the participation of people increases in the political system, at the same time they impact the political system negatively by forwarding false information and propaganda, and there is always risk of damaging the democratic values and incurring suspicion in political institutions.

This paper tries to explore the relationship between AI, digital propaganda, and democracy. Further, it tries to investigate how technological advancements are shaping the electoral process, public discourse, and people's participation in politics. This paper highlights the moral and legal issues created by these digital tools, including the problems of free expression, regulation, and accountability by doing case studies.

This study is also an attempt to examine some of the countermeasures, like digital literacy, fact-checking mechanisms, etc., taken to curb the threat of digital misconduct and preserve democratic integrity. In the end, this paper argues that sustaining democracy in the time of AI would need a meticulous balance between AI's ability to foster participatory governance and lowering its ability to curb the truth, openness, and collective decision-making.

Keywords

Democracy, Digital, Artificial Intelligence, Population, Technology.

A Simple Lightweight Approach to Secure BLE Legacy Pairing

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Abstract

Bluetooth Low Energy (BLE) has become a widely used wireless communication technology for Internet of Things (IoT) devices due to its low power consumption, cost efficiency, and compatibility with modern embedded platforms. However, the security of BLE communication remains a major concern, particularly when devices rely on legacy pairing mechanisms. In many implementations, the commonly used Just Works association model provides weak authentication and lacks protection against many attacks such as MITM and many more. As a result, BLE devices may be vulnerable to several security threats, including passive eavesdropping, replay attacks, device spoofing, and downgrade attacks. To address these vulnerabilities, this paper proposes a lightweight cryptographic framework designed to strengthen BLE legacy pairing while remaining suitable for resource-constrained IoT devices. The framework suggests Elliptic Curve Diffie-Hellman (ECDH) for secure key establishment, a nonce-based challenge-response protocol to ensure message freshness and prevent replay attacks. Security analysis indicates that the proposed framework enhances confidentiality, authentication, and data integrity while maintaining minimal computational overhead for low-power IoT environments.

Keywords

Bluetooth Low Energy (BLE), Legacy Pairing Security, Internet of Things (IoT), Elliptic Curve Diffie-Hellman (ECDH), Challenge-Response Authentication, Cryptographic Security Framework, Firmware Integrity Verification.

Campus Sustainability: Lessons from Research and Practice

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Abstract

The growing emphasis on sustainable development has positioned higher education institutions as key actors in addressing environmental, social, and economic challenges. Campus sustainability has consequently evolved into a multidimensional concept that extends beyond environmental management to include teaching and learning, research, stakeholder engagement, and community outreach. This paper presents an overview of campus sustainability by synthesizing theoretical perspectives and lessons learned from a series of studies conducted in higher education settings. The discussion highlights the evolution of campus sustainability frameworks, institutional sustainability initiatives, assessment approaches, and empirical findings on sustainability practices and student engagement. Collectively, these studies demonstrate that achieving campus sustainability requires an integrated approach that combines institutional commitment, stakeholder participation, sustainability-oriented education, and continuous performance improvement. The paper also identifies several emerging research opportunities, including the integration of behavioral theories to explain sustainability participation, the application of advanced analytical methods for sustainability assessment, cross-institutional comparative studies, and the use of digital technologies and artificial intelligence to support sustainable campus management. By summarizing accumulated knowledge and identifying future research directions, this paper provides useful insights for researchers, university leaders, and policymakers seeking to strengthen sustainability initiatives in higher education.

Keywords

Campus sustainability, higher education, multiple case studies, student attitude.

The Diagnostic Value of the Voice Handicap Index (VHI) Questionnaire in Tumour-Like Diseases of the Larynx

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Abstract

Relevance: Tumour-like diseases of the larynx – in particular, nodules, polyps and cysts of the vocal folds – are among the most common pathologies associated with impaired phonation. These conditions typically manifest as varying degrees of dysphonia and have a significant impact on patients' quality of life and social activity. Although traditional diagnostic methods (laryngoscopy, stroboscopy) allow structural changes to be identified, they do not provide a complete assessment of the patient's subjective perception of voice quality. Consequently, the Voice Handicap Index (VHI) questionnaire is widely used in clinical practice as a tool for comprehensively assessing the extent to which voice disorders affect a patient's daily life.

Aim of the Study: To investigate Voice Handicap Index (VHI) scores in tumour-like laryngeal conditions (nodules, polyps and vocal fold cysts), and to determine their diagnostic and differential significance.

Materials and Methods: The study included 60 patients, divided into three groups:

- Group 1 – patients with vocal fold nodules (n=22);
- Group 2 – patients with vocal fold polyps (n=20);
- Group 3 – patients with vocal fold cysts (n=18).

All patients underwent clinical, endoscopic and stroboscopic examinations. To assess subjective voice disorders, the standardised Voice Handicap Index (VHI-30) questionnaire was used, comprising three subscales: functional (F), physical (P) and emotional (E). The maximum score for each subscale is 40, with a total of 120 points. The data obtained were statistically analysed using the calculation of mean values ($M \pm m$), the Student's t-test and analysis of variance. The significance of differences was assessed at a significance level of $p < 0.05$.

Results: The study found that all patient groups showed a significant increase in Voice Handicap Index (VHI) scores, indicating a marked impact of tumour-like laryngeal diseases on the quality of phonation. However, the nature and structure of subjective impairments varied depending on the type of pathology.

In patients in Group 1 (vocal fold nodules, n=22), the overall VHI score was 42.3 ± 3.1 points, which corresponds predominantly to moderate dysphonia. In this group, a relative predominance of the functional subscale (16.2 ± 1.4) was noted, reflecting difficulties with vocal exertion (rapid vocal fatigue, gradual weakening of the voice, inability to sustain prolonged phonation). The physical (14.1 ± 1.2) and emotional (12.0 ± 1.1) components were less pronounced, indicating the predominantly functional-dysphonic nature of this condition. Differences compared with control values were statistically significant ($p < 0.05$), although the scores remained lower than in other groups.

In Group 2 (vocal fold polyps, n=20), the overall VHI score reached 58.7 ± 4.2 points, corresponding to moderate dysphonia. In this group, the physical component (22.5 ± 2.1) was significantly predominant, reflecting the influence of morphological changes on vocal function. Patients more frequently complained of hoarseness, a rough voice, and a sensation of a 'foreign body' during phonation. The functional score (18.3 ± 1.6) was also elevated, and the emotional component (17.9 ± 1.5) exceeded the corresponding values in the nodule group, indicating more pronounced psycho-emotional stress. The differences from Group 1 were statistically significant ($p < 0.05$).

Patients in Group 3 (vocal fold cysts, n=18) had the highest VHI scores— 64.1 ± 3.8 points—which corresponds to severe dysphonia. All three subscales were characterised by high scores: functional – 21.3 ± 1.8 ; physical – 24.1 ± 2.0 ; emotional – 18.7 ± 1.6 . The predominance of the physical component is explained by a marked impairment of the vibrational properties of the vocal folds in the presence of a cyst. At the same time, the high level of emotional indicators points to a significant reduction in social adaptation, marked communicative discomfort and psychological stress in patients. Differences compared with Group 2 were also statistically significant ($p < 0.01$), confirming a more severe course of dysphonia in the presence of cysts.

Correlation analysis revealed a positive correlation between the overall VHI score and the degree of stroboscopic abnormalities ($r=0.62$), indicating consistency between subjective and objective data. Furthermore, it was established that the physical component of the VHI correlates with the extent of morphological changes, whereas the functional component is associated with the level of vocal strain.

Conclusion: The results obtained demonstrate the high clinical and informative value of the Voice Handicap Index (VHI) questionnaire in tumour-like diseases of the larynx. This tool allows not only the detection of dysphonia but also a detailed assessment of its structure, taking into account functional, physical and emotional components.

In patients with vocal fold nodules, functional disorders predominate, confirming the leading role of vocal strain in the pathogenesis of this condition. In the case of polyps, the physical component is of primary importance, reflecting the impact of morphological changes on voice quality. The most severe clinical manifestations are observed in cysts, where marked impairment is noted across all components.

The use of the VHI allows for a differential assessment of disease severity, determines the impact of the condition on the patient's quality of life, and helps justify the choice of individual treatment strategies. Furthermore, this questionnaire is an effective tool for dynamic monitoring and assessment of treatment outcomes.

Thus, the inclusion of the VHI questionnaire in the standard examination protocol for patients with tumour-like diseases of the larynx is scientifically justified and clinically appropriate.

