

International Conference on
Advancements and Future Trends in
Collaborative Technologies: Engineering,
Social Sciences, Humanities & Management

ESHM - 2025

Organized By:



SAMBHRAM
INSTITUTE OF TECHNOLOGY

Sambhram Institute of Technology (SaIT)

(Affiliated to Visvesvaraya Technological University, Recognized by Government of Karnataka,
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M.S.Palya, Vidyaranyapura Post, Bangalore - 560097

In Association With



www.conferenceworld.in



www.iardo.com

Date: 24th May 2025

ISBN: 978-93-48954-73-2

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Editors

**Dr. C. V. Ravishankar
Dr. H. G. Chandrakanth
Dr. M. N. Sreerangaraju**

Published By:

*A.R. Research Publication
3/186, Santpura Govindpuri Modinagar- 201201.
Ghaziabad*

Preface

We are pleased to present the Proceedings of the International Conference on Advancements and Future Trends in Collaborative Technologies: Engineering, Social Sciences, Humanities & Management (ESHM-2025), organized by Sambhram Institute of Technology, Bangalore, in association with Conference World and AR Research Publication.

In an era of rapid technological innovation and interdisciplinary collaboration, ESHM-2025 served as a platform for scholars, researchers, industry professionals, and students to exchange ideas, showcase innovations, and address contemporary challenges. The theme, “Transforming Engineering through Innovation,” emphasized harnessing cutting-edge advancements for societal progress.

The conference covered diverse domains—Electrical and Electronics Engineering, Wireless Communication, Network and Cyber Security, Artificial Intelligence, Data Science, Big Data Analytics, Information Systems—alongside emerging work in Management, Social Sciences, and Humanities, fostering a holistic perspective on technology’s role in human endeavor.

We are proud to partner with AR Research Publication, known for precision and prompt service, and Conference World, renowned for impactful events across India at institutions including Delhi University, Jawaharlal Nehru University, PHD Chamber of Commerce and Industry, YMCA, India International Centre, Sri Venkateswara College of Engineering and Technology, and Vedant Engineering, Kota, among others.

This edition received 95+ submissions, with 63 presentations from national and international participants. After rigorous review, 52 papers were published and 11 presented. The works reflected strong theoretical depth and practical relevance, offering insights into emerging trends. Professionally chaired sessions and active engagement created a stimulating environment.

We thank the Technical Organizing Committee, session chairs, and contributing authors for their dedication. These proceedings stand as a lasting scholarly record and a valuable reference for future research, collaboration, and innovation.

About SaIT

Sambhram Institute of Technology (SaIT), established in 2001 by the Sambhram Educational Trust is part of the renowned Sambhram Group of Institutions. This group encompasses a wide range of educational establishments including an engineering, medical, dental, nursing, hotel management, PUC and degree colleges. Beyond education, the Sambhram Group is well-known for its contributions to the fields of healthcare, hospitality and real estate development. SaIT offers a diverse portfolio of programs including several undergraduate and five doctoral programs in engineering, in addition to MBA program. The institute is strategically located just 13 kilometers from the heart of Bengaluru & spread across a 10-acre lush, green campus is very close to prominent organizations such as IISc, BEL, HMT and Indian Air Force. SaIT boasts strong industry collaborations and houses advanced laboratories set up in partnership with Wipro (Mission10x), Intel, Texas Instruments, BMW (Engine Lab), Red Hat, ICT Academy, and others. The institute also hosts active student chapters of leading professional organizations such as IEEE, IETE, ISTE, and Engineers without Borders (EWB), fostering a vibrant academic and professional environment.

About the Conference

Sambhram Institute of Technology, Bangalore proudly announces International Conference on Advancements and Future Trends in Collaborative Technologies: Engineering, Social Sciences, Humanities & Management (ESHM-2025). The conference strives to bridge the gap between Industry, Academia and Researchers with emerging technologies. The conference provides a forum for the Researchers, Industry Professionals, Academicians and Students to discover and publish their innovative solutions for real time problems. ESHM-2025 covers all the advanced techniques in the areas of Electrical & Electronics, Wireless Communication, Network Security, Cyber Security, Artificial Intelligence, Data Science, Big data Analytics and Information Systems. Conference also emphasizes contributions from researchers and students in the fields of Management, Social Sciences, and Humanities, recognizing the successful integration of modern technologies in addressing challenges and solving problems within these domains. The theme selected for ESHM-2025 is “Transforming Engineering through Innovation” and its objective is to create a platform for facilitating the exchange of practical experiences in all aspects of Electronics and Computer Engineering in addition

to seeking solutions to the various challenges faced by Practicing Engineers, Technologists, Scientists, Managers and Researchers from Multidisciplinary Areas such as

Engineering:

- Innovative and sustainable engineering solutions.
- Emerging technologies in civil, mechanical, electrical, and computer engineering.
- Advances in materials science and engineering.
- Renewable energy systems and smart grid technology.
- Robotics, automation and artificial intelligence applications.
- Environmental engineering and water resource management.

Social Sciences:

- Interdisciplinary research in sociology, psychology, and anthropology.
- Public policy, governance, and administration.
- Urban studies and development.
- Economic theories and their applications in contemporary issues.
- Social justice, human rights, and community development.
- Behavioral studies and societal impacts of technology.

Humanities:

- Literary studies, critical theory, and cultural analysis.
- Historical perspectives and contemporary implications.
- Philosophy, ethics, and the human condition.
- Art history, visual culture, and media studies.
- Linguistics and language studies.
- Interdisciplinary approaches to humanities research.

Management:

- Strategic management and organizational behavior.
- Innovation and entrepreneurship.
- Marketing strategies and consumer behavior analysis.
- Financial management and investment strategies.
- Operations management and supply chain optimization.
- Human resource management and leadership development.

ESHM-2025 conference is conducted in both online and offline modes. The conference provides a platform for Researchers, Industry Professionals, Academicians and Students across the globe to share their research innovative ideas. This conference creates the platform to discuss future research directions, find solutions for existing complex technological challenges and build networks for further research collaboration. The conference seeks submission of novel research work from Practicing Engineers, Technologists, Scientists from R & D Institutions, Research Scholars, Faculty members and Students.

About IARDO

International Association of Research and Developed Organization (IARDO) is a leading organization in the field of academic research activities under the banner of India Educational Charitable Trust (Regd).

International Association of Research and Developed Organization (IARDO) is an apex body that promotes and encourages commendable achievements from all over the country. The organization under conference world regularly organizes national and International level conferences with the help of its members to promote socially responsible education practices and sustainable development in economic as well social front in India.

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Ph: +91 9986155861

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CEO, Company MahaaAI, US.

Dr. Rasheedul Haque

Associate Professor, Faculty of Business, Hospitality,

Accounting & Finance (FBHAF), MAHSA University, Malaysia.

Dr. Djumma Xusanov

Rector of Jizzakh, Sambhram University, Uzbekistan

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Keynote Speaker

Mr. Narender Chinthamu

Founder & CEO – MahaaAI Group of Companies



Narender Chinthamu is an internationally acclaimed innovator, visionary scientist, and founder of MahaaAI—a global platform that integrates ancient wisdom with modern science to create a sustainable and intelligent future for humanity. With over 1,600 global patents and publications featured by NASA, Harvard, Springer, Forbes, and ResearchGate, his pioneering work spans AI & advanced

robotics, agritech and climate-resilient farming, plant-based therapies for autism and diabetes reversal, natural energy innovations inspired by Tesla's 3-6-9 Theory and Sri Chakra Physics, blockchain for space tourism security, and AI-powered wearable assistants and smart POS systems.

As Country Chair of the World Business Angel Investment Forum (USA & India) and Advisory Board Member of AIGN, Mr. Chinthamu shapes AI policy, innovation ethics, and global governance across 148 countries, working alongside leaders from UNESCO, NASA, and UAE Scientific Boards. Recognized by the UAE Government, Florida Economic Forum, and Microsoft M12, he is spearheading multi-billion-dollar projects in robotics manufacturing, autonomous food systems, plastic alternatives, and AI-integrated education.

Guided by his life mission to revive and scale ancient technologies using AI, Mr. Chinthamu is committed to securing planetary health and empowering underserved communities. His research hubs in India, UAE, and the USA develop world-class innovations that address both local and global challenges. Honored with titles such as Father of Science, Swami Vivekananda Award, Icon of India – World's Most Innovative Scientist, Global Achievers Award, Pillars of the Nation, and Sarvodaya Karma Yogi, he continues to collaborate with global leaders and institutions including NASA, WHO, Microsoft, UF Innovate, and the Dubai Royal family.

Keynote Speaker

Dr. Rasheedul Haque

**Associate Professor Faculty of Business, Hospitality,
Accounting & Finance (FBHAF), MAHSA University, MALAYSIA**



Dr. Rasheedul Haque is an Associate Professor at the Faculty of Business, Hospitality, Accounting & Finance, MAHSA University, Malaysia, with over 28 years of diverse academic and corporate experience. His career spans teaching, research, and administration across India, Kuwait, and Malaysia, enriched by six years in corporate audit, accounts, and project administration. He has been a keynote speaker at numerous international conferences and has chaired and coordinated academic programs at the doctoral and undergraduate levels.

A prolific researcher, Dr. Haque has authored more than 210 publications in Scopus, WOS, and other indexed journals, contributed book chapters, and published two books. He has guided eight PhD scholars, examined 15 doctoral theses, and received four research grants. His active participation in over 120 international and national conferences reflects his commitment to advancing knowledge and fostering academic collaboration.

In recognition of his outstanding contributions, Dr. Haque has been honored with 12 prestigious awards, including the Outstanding Scientist Award (IKSAD, Turkey, 2022) and ICON of India (2023). His expertise covers Financial Accounting, Cost & Management Accounting, Corporate Finance, Strategic Management, and Entrepreneurship, while his research focuses on SME Entrepreneurship, Digital Innovations, Islamic Finance, and Service Quality. Passionate about mentoring and academic excellence, he continues to inspire students and scholars worldwide.

Keynote Speaker

Dr. Djumma Xusanov,

Rector of Jizzakh, Sambhram University, Uzbekistan



Born on May 4, 1952, in the Pastdargom district of the Samarkand region, Uzbekistan, Dr. Djumma Xusanov is a distinguished academic and administrator with an extensive background in mathematics and higher education. He graduated from Samarkand State University in 1975 with a

degree in Mathematics and went on to earn the prestigious title of Doctor of Physical and Mathematical Sciences. He currently holds the academic rank of Professor. Over the course of his illustrious career, he has held several significant leadership roles, including his current position as Rector of Jizzakh "SAMBHRAM University" since 2022. Prior to this, he served as Head of the Department of Computer Technologies at the Academic Lyceum of Tashkent State Technical University from 2016 to 2022. From 2012 to 2016, he worked as a Professor in the Department of Higher Mathematics at the Tashkent Institute of Chemical Technology. His contributions also extend to industry and government; he was Deputy Director at NGI Investment LLC from 2005 to 2008 and served as First Deputy Minister in the Ministry of Higher and Secondary Specialized Education of Uzbekistan from 2000 to 2005.

His work has been recognized at the national level with several prestigious honors, including the "Dostlik" Order and the title of "Honored Scientist of the Republic of Karakalpakstan." Fluent in Russian, Tajik, and Uzbek, he brings a multicultural and multilingual perspective to his academic and administrative endeavors. His dedication to education, research, and leadership continues to inspire students, educators, and policymakers across Uzbekistan and beyond.

Guest of Honors & Session Chairs

Dr. Nagaraj S,

Consulting Data Scientist



Dr. Nagaraj currently serves as a Consulting Data Scientist, bringing cutting-edge insights to Machine Learning (ML) and Data Analytics initiatives in the industry. Over the past four years, he has been associated with reputed organizations such as Noesys Software Pvt. Ltd and Nyla Business Ventures LLP, where he has led a variety

of projects including Churn Analysis, Predictive Modeling, Text and Numerical Data Extraction, and Industrial Data Analysis from both structured and unstructured data sources.

Prior to his transition into industry consulting, Dr. Nagaraj undertook full-time research at BMS College of Engineering, focusing on Machine Learning applications in Model Order Reduction of Nonlinear Dynamical Systems, a domain that bridges advanced computational techniques with complex system modeling.

Dr. Nagaraj's academic journey spans over 18 years of distinguished service as an Assistant and Associate Professor in the Department of Electronics and Communication Engineering across several engineering institutions. Throughout his tenure, he has been deeply committed to teaching, mentoring, curriculum development, and fostering a spirit of research and innovation among students.

An avid researcher and academic contributor, Dr. Nagaraj has authored numerous research papers, journal articles, and book chapters, and has presented at several national and international conferences. His academic excellence is further highlighted by his regular invitations to serve as Session Chair at prominent academic and industry events.

With a unique blend of academic depth and industry expertise, Dr. Nagaraj continues to inspire and contribute to the evolving landscape of engineering education and data-driven innovation.

Guest of Honors & Session Chairs

Dr. K Ezhilarasan,

Associate Professor, SJCIT, Chikkabalapur



Dr. K. Ezhilarasan holds a B.E. in Electronics and Communication Engineering from Manonmaniam Sundaranar University, Tamil Nadu, M.Tech in VLSI from Sathyabama University, Chennai, and Ph.D. from Jain University, Bengaluru. With over 19 years of experience in teaching and research, his areas of expertise include

processing, signal processing, and VLSI design. He has published more than 40 papers in national and international journals, holds 7 patents, and serves as a reviewer for IEEE flagship conferences and various reputed journals. Dr. Ezhilarasan is also an editorial board member for several academic journals and has delivered numerous technical talks at Faculty Development Programs (FDPs) across the country. He has played a key role in coordinating and organizing various national and international academic events. A dedicated member of multiple professional bodies, he is a Senior Member of IEEE, a Life Member of ISTE, and a member of the Institution of Engineers and IAENG. He has also successfully received project funding from KSCST, IEEE Bangalore Section, and Agastya International Foundation. Currently, he serves as an Associate Professor in the Department of Electronics and Communication Engineering at SJCIT, Chikkaballapur.

Proceeding of the conference has been published with **ISBN: 978-93-48954-73-2** International Conference on Advancements and Future Trends in Collaborative Technologies: Engineering, Social Sciences, Humanities & Management (ESHM - 2025) organized at Sambhram Institute of Technology (SaIT), Affiliated to Visvesvaraya Technological University. This edition of the conference received over 95+ paper submissions and featured 63 presentations from participants across various countries and different states of India. Following a rigorous review process, 52 papers were shortlisted for publication and 11 were selected for presentation.

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AR Research Publication,

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This edition can be exported from India only by the publishers, AR Research Publication (India) ISBN: **978-93-48954-73-2**.

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Cover Design: Mr. Sumit Kumar