



**Faculty of Computing**  
Sabaragamuwa University of Sri Lanka



**5<sup>th</sup> International Conference on Advanced Research in Computing**

**ICARC 2025**

*“Converging Horizons: Uniting Disciplines in Computing Research through AI Innovation”*

# **PROGRAMME BOOK**

19<sup>th</sup> - 20<sup>th</sup> February 2025

**Faculty of Computing**  
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# ICARC – 2025

*“Converging Horizons: Uniting Disciplines in Computing Research Through AI Innovation”*

5<sup>TH</sup> INTERNATIONAL CONFERENCE ON  
ADVANCED RESEARCH IN COMPUTING



19<sup>TH</sup> – 20<sup>TH</sup> FEBRUARY 2025  
FACULTY OF COMPUTING, SABARAGAMUWA UNIVERSITY OF SRI LANKA,  
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Mr. Rifai Kariapper (South Eastern University of Sri Lanka, Sri Lanka)  
Mr. Kithsrii Jayakody (Wayamba University of Sri Lanka, Sri Lanka)  
Mr. Thiviyan Senthilrajah (University of Moratuwa, Sri Lanka)  
Ms, Thanuja Dananjali (Sabaragamuwa University of Sri Lanka, Sri Lanka)

## Message from the Vice Chancellor



It is with immense pleasure that I extend my heartfelt appreciation to the Faculty of Computing for organizing the 5th International Conference on Advanced Research in Computing – ICARC 2025. Centered around the theme "Converging Horizons: Uniting Disciplines in Computing Research Through AI Innovation," this conference underscores our commitment to integrating economic and sustainable perspectives into computing research—an essential step in navigating today's rapidly evolving technological landscape.

ICARC has established itself as a vital platform for advancing cutting-edge scientific knowledge across various disciplines within our teaching and research domains. It serves as a beacon of our dedication to exploring the transformative opportunities and challenges presented by information and communication technology in the modern world.

I take great pride in recognizing the Faculty of Computing for their unwavering commitment to excellence in organizing this prestigious event. The collaboration and technical co-sponsorship from IEEE, along with the submission of accepted papers to the IEEE Xplore Digital Library, demonstrate the high academic and research standards upheld by the Faculty. This accomplishment not only aligns with our vision of becoming a world-class academic institution but also strengthens our role in addressing global technological demands.

ICARC 2025 will spotlight key research areas such as Artificial Intelligence, Machine Learning, and Computer Vision, among others. By doing so, it will not only contribute to Sri Lanka's national vision but also position us to lead and influence global discussions on emerging trends in computing.

I am confident that this conference will foster meaningful knowledge exchange, promote interdisciplinary research collaborations, and open avenues for product commercialization. As we embark on this collective journey, I hope ICARC 2025 serves as a catalyst for pioneering innovations and shaping a future driven by technological excellence.

I look forward to witnessing the profound impact and success of ICARC 2025. My sincere gratitude goes to all researchers, session chairs, sponsors, and contributors for their invaluable efforts in making this event a resounding success.

Wishing you all a productive and insightful conference.

**Professor M. Sunil Shantha**  
Vice-Chancellor

## Message from the Dean of the Faculty



It is my great pleasure to extend a warm welcome to all of you to the 5th International Conference on Advanced Research in Computing (ICARC), organized by the Faculty of Computing at Sabaragamuwa University of Sri Lanka for the fifth consecutive year. Scheduled for the 19th and 20th of February 2025, this hybrid event brings together academics, researchers, industry professionals, and students to explore advancements in computing and technology.

This year's theme, "*Converging Horizons: Uniting Disciplines in Computing Research Through AI Innovation*," highlights a transformative shift in the AI landscape. It emphasizes the importance of integrating diverse fields of computing to foster interdisciplinary collaboration. Leveraging AI as a unifying force, this theme focuses on addressing complex global challenges, driving innovation, and pushing the boundaries of research.

ICARC 2025 is technically co-sponsored by IEEE Global, IEEE Sri Lanka Section, IEEE Computer Society Sri Lanka Chapter, IEEE Communication Society, IEEE Signal Processing Chapter, IEEE EMBS Chapter, and IEEE IAS Chapter. Additionally, the Sri Lanka Medical Association joins as the Knowledge and Innovation Partner, introducing a unique interdisciplinary approach to this year's event. Over the past five years, ICARC has established itself as a flagship event for the Faculty of Computing. It has significantly enhanced the faculty's research profile while creating opportunities for global collaboration. ICARC is proud to maintain a strong tradition of publishing high-quality, indexed proceedings, ensuring international visibility for its contributors. Achieving eight indexed publications within four years reflects its growing prominence within the academic community.

ICARC continues to be a platform where young researchers connect with industry experts and academic mentors. It fosters innovation and professional growth, strengthening its reputation as a premier event in computing research.

I sincerely thank the organizing and technical teams for their tireless efforts, which have made this event possible. It is an honor to lead such a dedicated team.

As we embark on this conference, I encourage all participants to engage actively in sessions and enjoy the atmosphere of Sabaragamuwa University as we celebrate 29 years of service to the nation.

*Professor S. Vasanthapriyan*

Dean

Faculty of Computing

## Message from Conference Chair - ICARC 2025



Greetings and congratulations on the successful organization of the 5th International Conference on Advanced Research in Computing (ICARC 2025). Over the years, ICARC has evolved into a distinguished platform for researchers, practitioners, and industry experts to engage in thought-provoking discussions and present cutting-edge advancements in computing. This year's theme, "Converging Horizons: Uniting Disciplines in Computing Research Through AI Innovation," underscores the transformative role of Artificial Intelligence (AI) in fostering interdisciplinary collaboration and innovation across diverse domains.

The rapid progression of AI is not only enhancing traditional computing paradigms but also forging new hybrid fields that integrate principles from multiple disciplines. At ICARC 2025, we aim to explore the synergy between AI and various computing domains, paving the way for groundbreaking research and impactful technological developments. ICARC 2025 promises an enriching experience, featuring keynote and plenary sessions by esteemed scholars and industry leaders, technical paper presentations, pre-conference workshops, tutorials, and interactive discussions. The conference continues its tradition of excellence, proudly marking its fourth consecutive year with IEEE Technical Co-sponsorship. Notably, accepted papers will be submitted for inclusion in IEEE Xplore, provided they meet IEEE's quality and scope requirements.

The conference encompasses a broad spectrum of technical tracks, including Artificial Intelligence and Machine Learning, Text Analytics and Natural Language Processing, Computer Networks and Internet of Things, Knowledge Management and Software Engineering, Generative AI Enhanced Teaching and Learning, Digital Transformation and Industry 5.0, Digital Transformation in Healthcare, as well as an Open Track and a dedicated Graduate Colloquium. Additionally, ICARC 2025 is honored to have technical co-sponsorship from IEEE Global, IEEE Sri Lanka Section, IEEE Computer Society Sri Lanka Chapter, IEEE Communication Society Chapter, IEEE Engineering in Medicine and Biology Society (EMBS) Sri Lanka Chapter, and IEEE Industry Applications Society (IAS) Sri Lanka Chapter.

I extend my sincere appreciation to the dedicated organizing committee, reviewers, keynote and plenary speakers, and all participants whose unwavering commitment has contributed to the success of this event. A special note of gratitude goes to the Faculty of Computing, Sabaragamuwa University of Sri Lanka, for their steadfast support and leadership in hosting ICARC 2025. Additionally, we are deeply grateful to our patrons and sponsors, whose generosity and encouragement have been instrumental in making this conference a reality.

As we come together to explore the frontiers of AI-driven computing research, I encourage you to engage in stimulating discussions, foster collaborations, and contribute to shaping the future of computing. I look forward to witnessing the impactful research and innovations that will emerge from this esteemed gathering.

Dr K.P.N Jayasena  
General Chair, ICARC 2025

## Message from Honorary Chair - ICARC 2025



It gives me immense pleasure and exhilaration to write this message for this fifth edition of IEEE International Conference on Advanced Research in Computing (IEEE ICARC 2025). I congratulate the IEEE Computer Society Chapter organizers for this initiative. It has been an emerging area and of great value to many in industry and academia. The ICARC has garnered recognition as a key platform for showcasing cutting-edge research, both nationally and internationally. It is one of the few conferences in Sri Lanka technically co-sponsored by IEEE and is unique in having a dedicated track for industry partners. Over the years, industry leaders across Sri Lanka have actively contributed R&D papers to the conference. This edition encompasses a wide range of topics aligned with the theme, "Converging Horizons: Uniting Disciplines in Computing Research Through AI Innovation." The key areas include Artificial Intelligence and Machine Learning, Knowledge Management and Software Engineering, Computer Networks and the Internet of Things, Digital Transformation and Industry, Generative AI in Teaching and Learning, Digital Transformation in Healthcare, Text Analytics and Natural Language Processing, along with open tracks that provide comprehensive coverage of the theme.

IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. IEEE Computer Society Sri Lanka Chapter has been at the forefront of disseminating knowledge about the latest technologies in the field of computing. The members share a common interest in the theory, practice and application of Computer Science, Information Technology and its allied fields. Over the years, the chapter has conducted numerous events, workshops and sessions, with several prestigious universities and organizations.

Jyotika Athavale  
2024 IEEE-Computer Society President

**Abstract of Keynote - ICARC 2025**



Machine Learning is the science of extracting useful information from large and complex datasets. It is the primary technology behind much of the recent advances in Artificial Intelligence. This talk will review recent advances in the algorithmic and modelling aspects of the subject and will outline some challenging inference problems arising in Natural Language Processing, Computational Biology and Healthcare applications.

Professor Mahesan Niranjan  
University of Southampton, United Kingdom

## Message from IEEE President Elect 2025



Hello everyone. I am Mary Ellen Randall, and it is my honor to serve as the 2025 IEEE President-Elect.

Thank you for the opportunity to speak to you today about the importance of women in STEM fields and in the development of technology. But when we think of solving technical problems, differing perspectives come from a variety of characteristics. These perspectives may come from geographic, cultural, age and other experiences, to name just a few.

I would like to highlight the significant role IEEE can play in enabling and encouraging differing insights and in helping to ensure that everyone feels welcome and accepted in the technology community.

Think about looking at a tree in a photograph. It may be beautiful, but you only see one side of that tree. With a 360-degree view, you can appreciate the entire tree's beauty. This is also what happens when we use diverse teams to solve complex technical problems. Each team member brings a new view or dimension to solving the problem more entirely.

Technological innovation is a principal driver for improvements in quality of life and economic prosperity. Professions in engineering and technology are central to this innovation.

We - as engineers and technologists - have the opportunity to engage in efforts to change our world for the better and improve the way that people communicate, work, travel, stay healthy, and entertain themselves. We all benefit from new tools to get our work done and new ways to communicate.

The demand for jobs in STEM fields is rapidly growing. These positions play a critical role in driving innovation and competitiveness in both the local and the global economy. These fields are also imperative to solving some of the grand challenges facing society today.

Differing perspectives bring value, both economic and social. Having a more balanced representation in leadership and STEM roles bring different viewpoints, life experiences, and approaches to problem-solving, which can lead to more comprehensive and creative solutions. The different perspectives help round out the understanding of the problem and enable a more comprehensive solution. With more diverse perspectives in STEM roles, scientific innovations can be more universal. After all, how relevant can innovations really be if they do not take into consideration the needs of the wider population?

Studies show that companies with greater diversity in teams tend to be more innovative and generate higher levels of creativity. A more diverse workforce can lead to improved economic outcomes by tapping into a wider talent pool, boosting productivity, and creating new market opportunities.

airbags in cars were designed to protect people. but, the original airbag design didn't protect smaller bodies like women or children. Women engineers introduced changes the made a difference in product safety.

IEEE offers a truly global community defined by a commitment to advancing technology through our work. This community engagement is a powerful technology enabler that helps to facilitate cross-disciplinary collaboration and coordination to advance the development of technologies to help improve the human condition.

In my professional life, I have benefitted immeasurably by being part of this diverse technical community. Our members create a culture of inquiry that brings together differing experiences, viewpoints, and perspectives that inspired truly wondrous accomplishments.

This is what unites us all and gives us a sense of purpose as engineering professionals in a truly global community. We all bring something different to our work, but at our heart, we want to contribute in a worthwhile way. Enabling each person to be at their best is a successful formula. An empowered team will amaze you with what challenges they can solve!

For that reason – and for so many more – I would encourage all of you to consider the numerous resources and opportunities that are available throughout IEEE. To get the most from your IEEE membership, find ways to volunteer, contribute and meet other IEEE members.

This worldwide network of technology professionals is a gem in your professional toolbox. Utilize it to help others. You will find goodness comes back to you. By mentoring, you can encourage others to consider STEM fields, you serve as a role model and encourage participation.

By harnessing the power of all our members, we can face today's challenges and enable tomorrow's opportunities.

Thank you.

**Mrs. Mary Ellen Randall**

IEEE President – Elect 2025

## Message from IEEE CS President Elect 2025



### "Women in Science, Technology, Engineering and Mathematics"

The number of women in technology has increased significantly in the past ten years, thanks to very focused and extensive work from schools and universities, industry, and non-profit organizations. While there is still much work to do, it is important to start extending the definition of diversity beyond just gender. In this short talk, Grace Lewis, 2025 President Elect of the IEEE Computer Society, welcomes conferences attendees and asks for a call to action to consider additional aspects of diversity and challenge the status quo to create environments that promote and foster diversity and inclusion which in turn will lead to more innovative organizations and solutions.

#### **Dr. Grace A. Lewis**

IEEE Computer Society President-Elect in 2025

*Conference Programme at a Glance*

	Day 01	Day 02
	19 <sup>th</sup> February, 2025	20 <sup>th</sup> February, 2025
08.00 – 08.30	Breakfast	Breakfast
08.30 – 09.00	Graduate Colloquium - ICARC 2025  Knowledge Management and Software Engineering – I  Knowledge Management and Software Engineering – II  Digital Transformation in Healthcare - I  Digital Transformation in Healthcare - II  Generative AI Enhanced Teaching and Learning - I  Generative AI Enhanced Teaching and Learning - II	Artificial Intelligence and Machine Learning - I
09.00 – 09.30		Text Analytics and Natural Language Processing - I
09.30 – 10.00		Digital Transformation and Industry 5.0 - I
10.00 – 10.30		Computer Networks and Internet of Things - I
10.30 – 11.00		Open - I
11.00 – 11.30		
11.30 – 12.00		
12.00 – 01.00	Lunch	Lunch
01.00 – 02.00		Artificial Intelligence and Machine Learning – II
02.00 – 02.30	Welcome Tea	Text Analytics and Natural Language Processing - II
02.30 – 04.00	Inauguration	Digital Transformation and Industry 5.0 - II  Computer Networks and Internet of Things - II  Open – II  Artificial Intelligence and Machine Learning - III
04.00 – 04.30		Tea
04.30 – 05.00		
05.00 – 06.00		

### Plenary Speech Schedule

	<b>Plenary Speaker</b>	<b>Moderator</b>	<b>Date and Time</b>
Plenary Talk 01	Prof. Anuradha Karunasena Sri Lanka Institute of Information Technology, Sri Lanka.	Dr. LS Lekamge, Sabaragamuwa University of Sri Lanka.	19 <sup>th</sup> February 2025 08.30 am – 09.00 am
Plenary Talk 02	Prof. Buddhika Jayasekara, University of Moratuwa, Sri Lanka.	Ms. Umayya Balagalla, University of Sri Jayewardenepura.	19 <sup>th</sup> February 2025 08.30 am – 09.00 am
Plenary Talk 03	Prof. Pradeep Abeygunawardhana, Sri Lanka Institute of Information Technology, Sri Lanka.	Dr. RAHM Rupasingha, Sabaragamuwa University of Sri Lanka.	19 <sup>th</sup> February 2025 12.30 am – 01.00 pm
Plenary Talk 04	Dr. HMDK Herath, University of Peradeniya, Sri Lanka.	Dr. WVSK Wasalthilake, Sabaragamuwa University of Sri Lanka.	20 <sup>th</sup> February 2025 08.30 am – 09.00 am
Plenary Talk 05	Dr. Supunmali Ahangama, University of Moratuwa, Sri Lanka.	Dr. UAP Ishanka, Sabaragamuwa University of Sri Lanka.	20 <sup>th</sup> February 2023 08.30 am – 09.00 am
Plenary Talk 06	Mr. Kavinga Upul Ekanayake, ACCEL R (Pvt) Ltd., Sri Lanka.	Mrs. KGL Chathumini, Sabaragamuwa University of Sri Lanka.	20 <sup>th</sup> February 2023 08.30 am – 09.00 am
Plenary Talk 07	Prof. Anuradha Jayakody, Sri Lanka Institute of Information Technology, Sri Lanka.	Mr. HMKT Gunawardhana, Sabaragamuwa University of Sri Lanka.	20 <sup>th</sup> February 2023 08.30 am – 09.00 am
Plenary Talk 08	Dr. Madura Prabhani, University of Sri Jayewardenepura, Sri Lanka.	Ms. PMAK Wijeratne, Sabaragamuwa University of Sri Lanka.	20 <sup>th</sup> February 2023 08.30 am – 09.00 am

## Workshops and Tutorials Schedule

Date	Title and Resource persons	Description
20th January 2025	<p><b>Title: Leveraging Generative AI in Computational Social Science and Human Computer Interactions Research</b></p> <p>Speaker: Dr. Dilrukshi Gamage, Senior Lecturer, School of Computing, University of Colombo, Sri Lanka.</p>	<p>Generative AI is revolutionizing how we conduct research. Researchers can utilize GenAI tools and technologies in any phase of their research to make processes more efficient and productive. In the field of Human Computer Interactions, Generative AI can be employed in prototyping and user testing phases, allowing for rapid iteration and refinement of interface designs based on user feedback and interaction patterns. In the field of Computational Social Studies, the role of researchers is to understand social phenomena using digital traces. They can harness Generative AI in many ways by providing advanced tools for modeling, simulating, and analyzing social phenomena. In this workshop, the audience will be able to understand the application of GenAI tools and technologies in these two fields. The structure of the workshop will comprise interactive lectures with hands-on sessions and collaborative discussions. Participants will engage in coding exercises, analyze case studies, and work sample research projects that apply Generative AI in inception to implementation of a research project.</p>
17th January 2025	<p><b>Title: Confidential Computing and Secure Communication: Exploring Attested TLS Mechanisms</b></p> <p>Speaker: Mr Muhammad Usama Sardar, Research Associate, Technische Universität Dresden, Germany.</p>	<p>Transport Layer Security (TLS) is a widely used protocol for secure channel establishment. However, it lacks an inherent mechanism for validating the security state of the workload and its platform. To address this, remote attestation can be integrated in TLS, which is named attested TLS. In this talk, we present a comprehensive survey of the three main approaches for attested TLS, namely pre-handshake attestation, post-handshake attestation and intra-handshake attestation. We also present our collaboration model, which includes formal verification to provide high confidence for use in security-critical applications. Current collaborators include TU Dresden, Arm, Bonn-Rhein-Sieg University of Applied Sciences,</p>

		<p>Barkhausen Institut, Linaro, Siemens, Huawei, and Intuit. The attendees will gain technical insights into attested TLS protocols to make informed choices for their use cases of attestation for confidential computing. We demonstrate to the attendees that the widely used Intel's RA-TLS protocol (pre-handshake attestation) is vulnerable to replay attacks. We also demonstrate design and security flaws in SCONE attestation protocol (post-handshake attestation).</p>
<p>9th February 2025</p>	<p><b>Title: Graph Neural Networks: From Zero to Hero</b></p> <p>Speaker:                  Dr. Dharshana Kasthurirathna, Department of Computer Science, Faculty of Computing, SLIIT.</p> <p>Dr. Mahima Weerasinghe, Department of Computer Science, Faculty of Computing, SLIIT.</p> <p>Dr. Dinuka Sahabandu, Department of Computer Science, Faculty of Computing, SLIIT.</p> <p>Mr. Jeewaka Perera, Department of Computer Science, Faculty of Computing, SLIIT.</p> <p>Mr. Asiri Gawesha, Department of Software Engineering, Faculty of Computing, SLIIT.</p> <p>Mr. Sanka Mohottala, Department of Computer Science, Faculty of Computing, SLIIT.</p>	<p>Graph Neural Networks (GNNs) are revolutionizing the field of machine learning by enabling the analysis of graph-structured data, which is pervasive in domains such as social networks, molecular biology, and recommendation systems. Unlike traditional neural networks designed for grid-like data structures, GNNs utilize a message-passing mechanism, enabling nodes to iteratively aggregate information from their neighbors. This tutorial, titled "Graph Neural Networks: From Zero to Hero," introduces Sri Lankan researchers to the foundational concepts, advanced methodologies, and practical applications of GNNs. The tutorial spans eight modules, covering basics like graph theory and linear algebra, advanced GNN architectures such as Graph Convolutional Networks (GCNs) and Graph Attention Networks (GATs), and hands-on sessions using PyTorch Geometric (PyG). Applications explored include molecular property prediction, traffic forecasting, and computer vision tasks such as human action recognition. Special topics like graph expressivity, structural encoding, and challenges like oversmoothing are also addressed. Participants will gain insights into cutting-edge developments like Geometric Deep Learning and Topological Neural Networks, paving the way for further research. This initiative is crucial, given the under-representation of GNN research in local conferences despite its global prominence. Through engaging, hands-on sessions leveraging Python and Google Colab, the tutorial caters to a diverse</p>

		audience of students, academics, and industry professionals, requiring only foundational knowledge in deep learning and graph theory. This tutorial is organized by researchers from the BrAIN Labs Research Group at the Sri Lanka Institute of Information Technology (SLIIT).
14 <sup>th</sup> February 2025	<p><b>Title: AI Enabled NextG Wireless and IoT for a Fully Connected Smart World</b></p> <p>Speaker: Dr. Mayur Katwe, Assistant Professor, Department of Electrical and Computer Engineering, NIT Raipur, India.</p> <p>Dr. Himal A. Suraweera, Senior Lecturer, Department of Electrical and Electronic Engineering, Faculty of Engineering, University of Peradeniya.</p> <p>Prof. Maheshi B. Dissanayake, Professor, Department of Electrical and Electronic Engineering, Faculty of Engineering, University of Peradeniya.</p> <p>Dr. Sampath Edirisinghe, Senior Lecturer, Department of Computer Engineering, Faculty of Engineering, University of Sri Jayewardenepura.</p>	<p>This tutorial explores the transformative role of Artificial Intelligence (AI) and next-generation wireless communication systems in building a fully connected world using Internet of Things (IoT). With the rapid evolution toward a fully connected, smart world, AI has become a crucial component in optimizing communication networks, from enhancing spectral efficiency to enabling self-organizing network capabilities. We will discuss how IoT, combined with AI and machine learning, is reshaping smart cities by improving urban infrastructure, reducing environmental impact, and enhancing public services. A special focus will be placed on the role of vision sensors in IoT applications, showcasing their potential for real-time analytics in smart environments. Participants will gain insights into the applications and challenges of deploying IoT and AI-driven solutions, as well as the role of vision sensors in creating an interconnected, responsive infrastructure. The tutorial will conclude with an overview of NextG wireless systems deployment, addressing practical considerations and future opportunities in building intelligent, robust networks that serve as the backbone for smart cities and beyond.</p>
11th February 2025	<p><b>Title: Machine Learning for Next-Generation IoT Applications</b></p> <p>Speaker: Prof. Attaphongse Taparugssanagorn, Department of Information and Communications Technologies, Asian Institute of Technology, Thailand.</p> <p>Dr. MWP Maduranga, Centre for Telecommunication Research (CTR), Sri Lanka.</p>	<p>Machine Learning (ML) is set to play a pivotal role in the future of IoT applications, including predictive maintenance, anomaly detection, energy management, smart agriculture, location-based services, healthcare monitoring, and smart cities. ML can also enhance various IoT systems, such as IoT security, data analytics, adaptive data rate transmission, adversarial machine learning, and signal processing in IoT, among others. This workshop will cover the fundamentals, methodologies, applications, and future</p>

	<p>Technology Campus (SLTC), Padukka, Sri Lanka.</p> <p>Eng. Isuru Lakmal, Department of Mechatronics &amp; Industrial Engineering, Faculty of Engineering, NSBM Green University, Sri Lanka.</p>	<p>research directions for using ML in IoT systems. Moreover, there will be a hands-on session focused on ML for wireless indoor localization, addressing the fundamentals of these technologies, signal processing techniques, ML algorithms for localization, and the practical implementation of models using Python. Join us to explore how ML is revolutionizing next-generation IoT applications and gain valuable insights into the future of smart, connected environments.</p>
<p>19th February 2025</p>	<p><b>Title: AI-Powered Productivity for University Staff</b></p>	<p>The AI-Powered Productivity for University Staff workshop is a practical, hands-on training program designed to introduce university staff to the transformative potential of Generative AI (GenAI). With the increasing demand for efficiency, automation, and smarter workflows in higher education, this program equips participants with AI skills to enhance daily operations, streamline processes, and improve productivity in administrative and academic tasks.</p> <p>The program provides a concise yet comprehensive introduction to AI and Generative AI, followed by an interactive Prompt Engineering Masterclass where participants will learn how to effectively communicate with AI tools to generate high-quality outputs. The final session is a hands-on AI solution development lab, where participants will explore real-world applications of AI to solve common university-related challenges, such as automating documentation, enhancing communication, optimizing workflows, and supporting research activities.</p> <p>This 3-hour program is designed to be interactive, engaging, and immediately applicable, ensuring that university staff leave with practical AI skills that can be integrated into their daily responsibilities.</p>
<p>19th February 2025</p>	<p><b>Title: Digital Transformation in Healthcare</b></p> <p>Resource Panel: Dr. Kumara Mendis Consultant,</p>	<p>This session explores the transformative role of AI in healthcare, from clinical decision-making to medical education. It will demonstrate how AI-driven technologies enhance diagnostics, treatment planning, and patient care,</p>

	<p>Department of Primary Care &amp; Family Medicine, Faculty of Medicine, Sabaragamuwa University of Sri Lanka.</p> <p>Dr B.J.C.Perera Specialist Consultant Paediatrician and Honorary Senior Fellow, Postgraduate Institute of Medicine, University of Colombo, Sri Lanka.</p> <p>Dr. Vindya Perera Senior Lecturer, Department of Microbiology, Faculty of Medicine, Sabaragamuwa University of Sri Lanka. Secretary, Expert committee on Artificial Intelligence in Medicine, SLMA.</p>	<p>examine the ethical challenges and responsibilities in integrating AI into healthcare, and explore how AI is revolutionizing medical education, shaping the future of healthcare professionals.</p>
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### Panel Discussion Schedule

Date	Title and Resource persons	Description
20th June 2024	<p><b>Title: Shaping the Future: Policies for Generative AI in Sri Lankan Higher Education</b></p> <p>Moderator:            Prof. S. Vasanthapriyan            Professor,            Dean, Faculty of Computing, SUSL            IEEE - Sri Lanka Section.</p> <p>Resource Panel:            Prof. Asoka Karunananda            Faculty of Information Technology,            University of Moratuwa.</p> <p>Dr. Asitha Bandaranayake            Senior Lecturer,            University of Peradeniya, LEARN.</p> <p>Prof. Nuwan Kodagoda            Professor,            Dean, Faculty of Computing, SLIIT.</p> <p>Dr. Thushari Silva            Senior Lecturer,            University of Moratuwa, SLAAS.</p> <p>Dr. Menaka Ranasinghe            Senior Lecturer,            Electrical and Computer Engineering,            Open University Sri Lanka.</p> <p>Ms. Vishaka Nanayakkara            Senior Lecturer,            University of Moratuwa, LEARN.</p> <p>Prof. Roshan Ragel            Professor,            Department of Computer Engineering,            University of Peradeniya, LEARN.</p> <p>Dr. KPN Jayasena            Postdoctoral Researcher,            TU Dresden, Germany.</p>	<p>The General Research Committee (GRC) of SLAAS and ICARC, in collaboration with IEEE Sri Lanka Section, IEEE Computer Society Sri Lanka Chapter, and LEARN, is organizing a panel discussion titled "Shaping the Future: Policies for Generative AI in Sri Lankan Higher Education."</p> <p>The discussion covered key areas such as AI implementation in higher education, ethical considerations, curriculum integration, faculty development, research opportunities, and policy frameworks.</p> <p>session facilitated engaging discussions on shaping AI policies in Sri Lankan universities, highlighting the importance of ethical AI use, research advancements, and future opportunities.</p>

<p>12th February 2025</p>	<p><b>Panel Discussion</b>  <b>Title: Digital Transformation in Healthcare</b></p> <p>Moderator:                  Dr. Hasitha Wimalarathna                  Western University, Canada.</p> <p>Resource Panel:                  Dr. Akila Subasinghe                  University of Birmingham, Dubai.</p> <p>Dr. Khanita Duangchaemkarn                  University of Phayao, Thailand.</p> <p>Dr. Nishshanka Narampanawe                  Heta Technologies, Australia.</p>	<p>Digital transformation is revolutionizing healthcare through AI-driven diagnostics, secure data management, and enhanced collaboration. While these innovations improve efficiency and patient outcomes, they also raise challenges in privacy, ethics, and accountability. Ensuring a balanced approach between technological advancements and responsible implementation is key to sustainable and secure healthcare innovation.</p>
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## WIE Events

Date	Title and Resource persons	Description
16th January 2025	<p><b>WIE Panel Discussion</b>  <b>Title: Women in Leadership: Driving Economic Development Through STEM and Beyond</b></p> <p>Moderator:                      Ms. Abarnah Kirupananda                      Immediate Past Chair - IEEE Women in Engineering, Sri Lanka Section                      Senior Lecturer - Informatics Institute of Technology, Sri Lanka.</p> <p>Resource Panel:                      Ms. Sashiprabha Dharmadasa                      Director                      Client Service &amp; Technical Delivery/CISO, BoardPAC Inc.</p> <p>Ms. Wyomi Ranasinghe                      Director                      Product Management - Technology, IFS.</p> <p>Ms. Tania Fernando                      Acting Director                      Management Information Services, Peninsula Health, Australia.</p>	<p>The panel discussion aims to inspire and empower undergraduate and postgraduate female students, particularly those in STEM fields, to take up leadership roles that contribute to economic development. It will provide insights into overcoming challenges, building essential leadership skills, and exploring opportunities to lead in academia, industry, and governance.</p>
22nd February 2025	<p><b>Title: PearlHack Version 3.0 Inter University Women's Hackathon</b></p>	<p>The PearlHack 3.0 is an idea hackathon that will be conducted in parallel with ICARC 2025 open to all the female undergraduates islandwide. Participants will develop a method under the theme “<b>Converging Horizons: Uniting Disciplines in Computing Research through AI Innovation</b>” with an eye towards driving user engagement, enthusiasm, and exploration. Hackathon will be happening as a virtual event. The event will be held according to the terms and conditions which are provided by the organizing committee with the supervision of a panel of judges. The main objectives are to encourage female undergraduates towards innovations and inspire creativity, collaboration, and critical thinking, expose them to “<b>Converging Horizons: Uniting</b></p>

		<b>Disciplines in Computing Research through AI Innovation"</b> and related fields to foster their interest to make a better world through new discoveries.
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## Graduate Colloquium - ICARC 2025

<b>Date</b>	<b>19th February 2025</b>
<b>Venue</b>	LT202, Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka
<b>Time</b>	08.30 am - 11.15 am

<b>Session</b>		<b>Graduate Colloquium - ICARC 2025</b>
<b>Session Chair</b>		Prof. HSR Rosairo, Sabaragamuwa University of Sri Lanka
<b>Panel Members</b>		Prof. PKW Abeygunawardhana, Sri Lanka Institute of Information Technology Prof. RMKT Rathnayaka, Sabaragamuwa University of Sri Lanka Dr. S Gayan, University of Moratuwa
<b>Rapporteur</b>		Mrs. KT Dananjali, Sabaragamuwa University of Sri Lanka
<b>Session Coordinator</b>		Mrs. JDU Indumini, Sabaragamuwa University of Sri Lanka
08.30 am - 08.35 am		Introduction of the Chair
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
08.35 am - 08.50 am	<b>72</b>	A Comparative Analysis of Deep Learning Algorithms for Formality Classification in Texts Using Linguistic Features <i>K.M.G.S. Karunaratna, R.A.H.M. Rupasingha and B.T.G.S.Kumara</i>
08.50 am - 09.05 am	<b>80</b>	Towards Ethical Inference in Language Models: Integrating Religious Data and Enhancing Responsible LLM Development <i>K.S. Ranasinghe and I. Paik</i>
09.05 am - 09.20 am	<b>81</b>	Advanced Hate Speech Detection in Social Media Content Using LSTM and CNN <i>A. Varatharaj, S. Ahangama</i>
09.20 am - 09.35 am	<b>94</b>	ANNOTATE EASE: PDF METADATA EXTRACTION APPLICATION SPECIALIZING IN RESEARCH PUBLICATIONS <i>K. K. Nivetha and S. Priyasadini</i>
09.35 am - 09.50 am	<b>96</b>	Analyzing public sentiment and engagement dynamics across global protests <i>A.C. Nanayakkara</i>
09.50 am - 10.05 am	<b>135</b>	AI-Powered Automated Fashion Design System: Revolutionizing Creativity and Sustainability in Fashion <i>K. Srithar and S.Priyasadini</i>
10.05 am - 10.20 am	<b>217</b>	Predicting the Severity of Liver Cirrhosis with Image Processing Based Machine Learning Models <i>K. Prabazhini, J.A.U.S.Jayakody and M. Sivatharshan</i>
10.20 am - 10.35 am	<b>243</b>	Privacy-Protected Iris Recognition Using Block-Feature Fusion <i>W.A.W.U. Wickramaarachchi, D. Zhao, J. Zhou and J. Xiang</i>
10.35 am - 10.50 am	<b>255</b>	Machine Learning Approach to Predict University Students' Not Completing Degree on the First Attempt based on Influential Factors <i>U.P. Kudagamage, K. Karunanayaka K</i>
10.50 am - 11.00 am		Summing up by the Chair

## Technical Sessions

**Day** 19th February 2025

**Venue** Lecture Hall No 08

**Time** 08.30 am - 12.30 pm

<b>Session</b>	<b>Knowledge Management and Software Engineering - I</b>	
<b>Session Chair</b>	Professor Anuradha Karunasena, Sri Lanka Institute of Information Technology	
<b>Panel Members</b>	Professor Dasuni Nawinna, Sri Lanka Institute of Information Technology Dr. Samantha Rajapakshe, Sri Lanka Institute of Information Technology	
<b>Rapporteur</b>	Dr. L.S. Lekamge, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. W.D. Dimuthu Lakshan	
08:30 am - 08:35 am	Introduction of the Chair	
08:35 am - 09:00 am	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>70</b>	Impact of Artificial Intelligence on Decision- Making in Information Systems <i>RWMR Dharani Rajasinghe</i>
09:15 am - 09:30 am	<b>185</b>	Factors that Affect the Adoption of the Hybrid Project Management Approach: A Systematic Literature Review <i>A.A.K,G Amarasinghe and R. Wickramarachchi</i>
09:30 am - 09:45 am	<b>198</b>	How E-commerce Succeeds: The Role of Information Systems in Boosting Customer Satisfaction <i>G.P.S.L. Pathirana, S.J. Pathirana, G.S.B. Boyagoda, S.M. Thalagala, Dr.K. Wisenthige and C. Aluthwala</i>
09:45 am - 10:00 am	<b>224</b>	The Impact of Social Media Exposure on Consumer Banking Decisions in Sri Lanka <i>R.M.M.L. Samarasinghe1 and A.S. Withanaarachchi</i>
10:00 am - 10:15 am	<b>230</b>	Factors Affecting the Adoption of Agile Scaling Practices in Distributed Software Development Teams <i>H.P.S. Gandhira and R. Wickramarachchi</i>
10:15 am - 10:30 am	<b>234</b>	A Secure Protocol for Computer-Based Assessments in Disrupted Environments <i>Danishka Navin, Kasun De Zoysa, D. D. Karunaratna, S. M. Buddhika Harshanath</i>
10:30 am - 10:45 am	<b>281</b>	Toward a Greener Web: A Systematic Literature Review of Sustainable Practices in Web Development <i>R.A.W.L. Wimalasena and Nimasha Arambepola</i>
10:45 am - 11:00 am	<b>297</b>	Developing an AI Readiness Model for Software Project Management: A Thematic Analysis <i>R.B.M.T. Bandara and Ruwan Wickramarachchi</i>
11:00 am - 11:15 am	<b>307</b>	Analyzing the impact of prompt engineering on efficiency, code quality, and security in CRUD application development

		<i>K.A.A Shanuka Janaka Wijayanayake and Kaneeka Vidanage</i>
11:15 am - 11:30 am	<b>310</b>	DevSecOps Implementation for Continuous Security in Financial Trading Software Application Development <i>S.D.L.V. Dasanayake, Janaka Senanayake, W.M. J. I. Wijayanayake</i>
11:30 am - 11:45 am	<b>315</b>	Driving Innovation through Knowledge Management: Insights for IS Strategies <i>Harini Jayasundara, Naveen Jayathilake and Ruwan Wickramarachchi</i>
11:45 am - 12:00 pm	<b>317</b>	Enhancing Software Quality Assurance Through Automated Defect Triage <i>Y.N Binduhewa, P.P.G Dinesh Asanka</i>
12:00 pm - 12:15 pm	QA Session	
12:15 pm - 12:30 pm	Summing up by the Chair	

**Day** 19th February 2025

**Venue** Lecture Hall Number 09

**Time** 08.30 am - 12.00 pm

<b>Session</b>	<b>Digital Transformation in Healthcare - I</b>	
<b>Session Chair</b>	Professor Buddhika Jayasekara, University of Moratuwa	
<b>Panel Members</b>	Dr. Muditha Bandara Rathnayaka, University of Colombo Mr. Dinesh Asanka, University of Kelaniya	
<b>Rapporteur</b>	Ms. Umaya Balagalla, University of Sri Jayewardenepura	
<b>Session Coordinator</b>	Mr. PG Prasad Kumara	
08:30 am - 08:35 am	Introduction of the Chair	
08:35 am - 09:00 am	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>88</b>	Predictive Modeling of Cardiovascular Disease Using Machine Learning: A Comparative Analysis <i>Sadia Islam Tonni, Md Ashraful Alam, Amir Sohel, Chonchal Khan, Md.Khaledur Rahman Onik and Ismail Hossain Pranto</i>
09:15 am - 09:30 am	<b>123</b>	Comparative Analysis of Overall Survival Prediction for Glioblastoma Patients: Neural Networks vs. Random Forests with Data Augmentation <i>H.M.L.S. Kumari and C.K. Walgampaya</i>
09:30 am - 09:45 am	<b>160</b>	FracturePro: Automated Bone Fracture Identification and Classification Using an Ensemble Deep Learning Approach <i>B.K.M.S. Rodrigo and B. Athuraliya</i>
09:45 am - 10:00 am	<b>161</b>	An Examination of Harmonizing Multi-Vendor Cardiac MRI Data for Vendor-Neutral Image Segmentation <i>Hamdaan Mohideen, Mohamed Ayoob, cOshan Nettasinghe, Vithushan Sylvester and Helmini Bowala</i>
10:00 am - 10:15 am	<b>200</b>	Enhancing Chronic Kidney Disease Prediction: A Hybrid Approach Combining Logistic Regression and Random Forest Models <i>T.G. Jathunga and N.J. Abeygunwardena</i>
10:15 am - 10:30 am	<b>209</b>	Development of a Multi-Dimensional Image Processing Model for Personalized Diagnosis and Severity Assessment of Skin Diseases <i>Wijerama NS, Asanka PPG and Mahanama TV</i>
10:30 am - 10:45 am	<b>227</b>	The Application of Machine and Deep Learning Models for Detecting Malware Threats in Healthcare Organizations <i>A. Zhumabekova, O. Ussatova, V. Karyukin, E.T. Matson, N. Ussatov, K. Zhumabekova, and Y. Begimbayeva</i>
10:45 am - 11:00 am	<b>242</b>	A Comparative Study on Generalized Automated Medical Image Segmentation for Dataset Building <i>N. Kasinshan, V. Subramanieam, T. Yogeswaran, S.N. Liyanage, G.A.I. Devindi, R.G. Ragel, V. Thambawita and I. Nawinne</i>

11:00 am - 11:15 am	<b>256</b>	Cardiac MRI Segmentation of Ventricular Structures and Myocardium Using U-Net Variants <i>C.B. Wijesinghe, D. Meedeniya and P. Yogarajah</i>
11:15 am - 11:30 am	<b>260</b>	Boosting EEG-Based Emotion Recognition with Kolmogorov-Arnold Networks <i>S. Nimishan, S. Thuseethan, S. Vasanthapriyan and R.G. Ragel</i>
11:30 am - 11:45 am		QA Session
11:45 am - 12:00 pm		Summing up by the Chair

**Day** 19th February 2025

**Venue** Lecture Hall Number 10

**Time** 09.00 am - 11.15 am

<b>Session</b>	<b>Digital Transformation in Health Care - II</b>	
<b>Session Chair</b>	Senior Professor Ruwan Gopura, University of Moratuwa	
<b>Panel Members</b>	Dr. T. Uthayasanker, University of Moratuwa Ms Anjali Gamage, Sri Lanka Institute of Technology	
<b>Rapporteur</b>	Mrs. PKD Kumudu Kaushalya, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. Dumindu Patabandi	
09.00 am – 09.05 am	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:05 am - 09:20 am	<b>302</b>	Interpretation of Chest X-rays using Deep Learning Techniques for Early Diagnosis of Tuberculosis. <i>S Prathyunman, S P Kasthuri Arachchi</i>
09:20 am - 09:35 am	<b>316</b>	Functional Biomarkers of Alzheimer’s Disease: Explainable AI using Resting-State fMRI <i>S.Pavithira, K.Logiraj, J.Tuvensha, S.Subaramya, T.Kokul, and R.Nagulan</i>
09:35 am - 09:50 am	<b>335</b>	Large Language Model (LLM) Support for Preliminary Consultation in Healthcare. <i>Abishan Fernando, Dilani Wickramaarachchi</i>
09:50 am - 10:05 am	<b>348</b>	Engagement of Sri Lankan Medical Practitioners with AI and Mental Health Decision Support AI Chatbot <i>A.M.Tharindu Sachintha Adhikari Janaka Wijayanayake and. Kaneeka Vidanage</i>
10:05 am - 10:20 am	<b>384</b>	Optimizing Response Consistency of Large Language Models in Medical Education Through Prompt Engineering <i>U. G. T. L. Weerathunge, S. Jayalal and T. K. Wijayasiriwardhane</i>
10:20 am - 10:35 am	<b>392</b>	Model Optimization for Personalized Health Metrics Analysis <i>Perera K.K.M, Wijesiriwardena A, Pathirana A.P.S, Lakshan G.N, Pipuni Wijesiri, Anuradha Jayakody</i>
10:35 am - 10:50 am	<b>400</b>	Deep Learning Model for Diabetic Retinopathy Detection Using MobileNet Architecture <i>G. Vijayakanthan, R. Vaishali and L.J.M.D.N.K. Jayasundara</i>
10.50 am - 11.05 am	QA Session	
11.05 am - 11.15 am	Summing up by the Chair	

**Day** 19th February 2025

**Venue** Lecture Hall No 11

**Time** 09.00 am - 11.30 am

<b>Session</b>	<b>Knowledge Management and Software Engineering - II</b>	
<b>Session Chair</b>	Dr. Kapila Dissanayaka, Sri Lanka Institute Information Technology	
<b>Panel Members</b>	Mr. R K Ahmadh Rifai Kariapper, South Eastern University of Sri Lanka Ms Chalani Orthotaarachi, University of Kelaniya	
<b>Rapporteur</b>	Mr. GAC Anuradha Herath, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mrs. J D Tenushi Erandi	
09.00 am – 09.05 am	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:05 am - 09:20 am	<b>327</b>	Evaluating the Effectiveness of Large Language Models in Automated Unit Test Generation <i>T. Godage, S. Nimishan, S. Vasanthapriyan , P. Vigneshwaran , C. Joseph, and S. Thuseethan</i>
09:20 am - 09:35 am	<b>331</b>	The Role of IS/IT Strategies in Driving Business Transformation and Achieving Organizational Objectives : A Systematic Literature Review <i>G.W.S. Hasarinda, G.W. Wikramakalutota, R. Wickramarachchi</i>
09:35 am - 09:50 am	<b>334</b>	Assessing the Limits of Automated Accessibility Testing: Insights for QA Engineers and Tool Developers <i>D.T.H. Kodithuwakku, D.Wicramaarachchi</i>
09:50 am - 10:05 am	<b>337</b>	Critical Factors Influencing the Maturity of Business Analytics of Software and Apparel Industries in Sri Lanka <i>T.N. De Silva, J. Wijayanayake and S. Jayasinghe</i>
10:05 am - 10:20 am	<b>342</b>	Barriers and Strategy Analysis for the Usage of Social Media by small and medium-scale enterprises: A Systematic Review <i>D.D.K.Karawgoda and C.A.Kavirathna</i>
10:20 am - 10:35 am	<b>343</b>	The Role of AI in Software Test Automation <i>R.M.S. Ranapana, W.M. J. I. Wijayanayake</i>
10:35 am - 10:50 am	<b>367</b>	Evaluating AI-Based Unit Testing Tools: A Focus on Usability, Reliability, and Integration <i>Hafsa Aarifeen, and Dilani Wickramaarachchi</i>
10:50 am - 11:05 am	<b>381</b>	Implementation of Knowledge Management Practices in Sri Lankan Apparel Sector <i>M. P Sathsarani Silva and Yehemini Jayatissa</i>
11.05 am - 11.15 am	QA Session	
11.15 am - 11.30 am	Summing up by the Chair	

**Day** 19th February 2025

**Venue** Lecture hall No 14

**Time** 12.30 pm - 02.45 pm

<b>Session</b>	<b>Generative AI Enhanced Teaching and Learning - I</b>	
<b>Session Chair</b>	Professor Pradeep Abeygunawardhana, Sri Lanka Institute of Information Technology	
<b>Panel Members</b>	Dr. Kalpani Manathunga, Sri Lanka Institute of Information Technology Mr Prasanna S Hadela, Sri Lanka Institute of Information Technology	
<b>Rapporteur</b>	Dr. RAHM Rupasingha, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Miss. SA Dinithi Ravindra	
12.30 pm – 12.35 pm	Introduction of the Chair	
12.35 pm – 01.00 pm	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:00 pm - 01:15 pm	<b>218</b>	Transformative Impact of Predictive and Generative AI on Education Workforce in Developing Countries <i>M Weligodapola, C U Kumarapperuma</i>
01:15 pm - 01:30 pm	<b>228</b>	Revolutionizing Education: Generative AI as a Catalyst for Personalized Learning and Innovative Teaching Practices <i>I.G.U.D Jayaweera</i>
01:30 pm - 01:45 pm	<b>293</b>	An Approach to Detect Large Language Model Generated Firmware for Arduino Platform <i>Rajani Gunawardhana and Thareendhra Keerthi Wijayasiriwardhane</i>
01:45 pm - 02:00 pm	<b>301</b>	Leveraging AI to Ensure Authenticity in Student Assignments: A Knowledge-Based Validation and Evaluation Framework <i>D.C.L Hondarangala, D.Wickramaarachchi</i>
02:00 pm - 02:15 pm	<b>305</b>	A BI Approach for Student Engagement and Retention along with Cognitive Load Analysis for Educator <i>M.N. Algewatta and K. Manathunga</i>
02:15 pm - 02:30 pm	<b>322</b>	Scoring System for Academic Essay Questions with Personalised Feedback Generation <i>A.S.D.S. Kumara, D. Asanka</i>
02.30 pm - 02.35 pm	QA Session	
02.35 pm - 02.45 pm	Summing up by the Chair	

**Day** 19th February 2025

**Venue** Lecture hall No 08

**Time** 01.00 pm - 02.45 pm

<b>Session</b>		<b>Generative AI Enhanced Teaching and Learning - II</b>
<b>Session Chair</b>		Professor Roshan G. Ragel, University of Peradeniya
<b>Panel Members</b>		Dr. Asitha Bandaranayake, University of Peradeniya Dr TUK Edirisinghe, University of Sri Jayewardenepura
<b>Rapporteur</b>		Mrs. WVSK Wasalthilaka, Sabaragamuwa University of Sri Lanka
<b>Session Coordinator</b>		Mr. WD Dimuthu Lakshan
01.00 pm – 01.05 pm		Introduction of the Chair
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:05 pm - 01:20 pm	<b>258</b>	Enhancing Automated Grading with Capabilities of LLMs: Using Prompt Engineering and RAG Techniques <i>Thisuri Abeywardana, Nethmini Nandadewa, Vimansa Wickramasinghe, Sudam Rohanadheera, Thilini Nadungodage and Priyantha Hewagamage</i>
01:20 pm - 01:35 pm	<b>350</b>	Role of GenAI in Student Knowledge Enhancement: Learners Perception <i>M.S. Faathima Fayaza, Thiviyan Senthilrajah, Upeka Wijesinghe and Supunmali Ahangama</i>
01:35 pm - 01:50 pm	<b>362</b>	Enhancing Systematic Literature Reviews: Evaluating the Performance of LLM-Based Tools Across Key Systematic Literature Review Stages <i>L.N.P Silva, D. Wickramaarachchi</i>
01:50 pm - 02:05 pm	<b>370</b>	Development of a Chat Assistant Using Large Language Models for Personalized Mathematics Tutoring to Overcome Educational Disparities in Sri Lanka <i>Minuli Kannangara, Chathura Rajapakse, Dinesh Asanka and Nirasha Jayalath</i>
02:05 pm - 02:20 pm	<b>140</b>	Transforming Music: A Review of Artificial Intelligence in Jazz Reharmonization <i>S. Jayasinghe and K. Bhareti</i>
02:20 pm - 02:35 pm	<b>156</b>	Advancements in Generative AI and its Applications <i>P M L Liyanage, N K Ranasinghe and L V Kruglova</i>
02:35 pm - 02:40 pm		QA Session
02:40 pm - 02:45 pm		Summing up by the Chair

**Day** 20th February 2025

**Venue** Lecture Hall Number 08

**Time** 08.30 am - 12.45 pm

<b>Session</b>	<b>Artificial Intelligence and Machine Learning - I</b>	
<b>Session Chair</b>	Dr. Damayanthi Herath, University of Peradeniya	
<b>Panel Members</b>	Professor Roshan G. Ragel, University of Peradeniya Dr. Asitha Bandaranayake, University of Peradeniya Dr. Ruwan D Nwarathna, University of Peradeniya	
<b>Rapporteur</b>	Mrs. WVSK Wasalthilaka, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. WD Dimuthu Lakshan	
08:30 am - 08:35 am	Introduction of the Chair	
08:35 am - 09:00 am	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>21</b>	Machine Learning Based Enhanced Remote Power Analysis Attacks <i>I. Kasthuripitiya, J. Ariyawansa, T. Ranasinghe, M. Sandirigama and D. Jayasinghe</i>
09:15 am - 09:30 am	<b>68</b>	Classification of Alzheimer’s Disease Stages using Weighted Brain Connectivity based Graph Convolutional Neural Network <i>S.Janany, K.Logiraj, J.Tuvensha, S.Subaramya, T.Kokul, and R.Nagulan</i>
09:30 am - 09:45 am	<b>124</b>	Real-Time Recognition and Translation of Sinhala Sign Language <i>T.M.Lakmini Anuruddhika S. Thennakoon, Daham C. Kahawearachchi and R. Panchendrarajan</i>
09:45 am - 10:00 am	<b>127</b>	SSL400 - A Comprehensive Word Level Dataset for Sinhala Sign Language Recognition <i>Yohan Abhishek, T.G.D.K. Sumanathilaka</i>
10:00 am - 10:15 am	<b>146</b>	Enhanced Anomaly Detection in Aerial Imagery using Text to Image Generation <i>Nethmi Muthugala, Yunpeng Li</i>
10:15 am - 10:30 am	<b>155</b>	Machine Learning Approach to Modeling Rainfall and River Overflow Trends in Nilwala River Basin, Sri Lanka <i>K.V.N.S. Perera, D.D.A. Arthanayake, M.W.P.Maduranga</i>
10:30 am - 10:45 am	<b>164</b>	Improved Grading Recurrent Unit Model for Urban Traffic Flow Prediction <i>K.L.Y.S. Karandana, D.D.A. Arthanayake and M.W.P. Maduranga</i>
10:45 am - 11:00 am	<b>165</b>	Comparative Study Between Traditional SARIMA Model And Machine Learning Algorithms To Forecast Monthly Coconut Production In Sri Lanka <i>A.P.A Fernando, J.B. DonPaul and D.D.A. Arthanayake</i>
11:00 am - 11:15 am	<b>181</b>	Multitasking Neural Network for Cricket Team Selection with Complex Dynamics <i>W.M.H.G.T.C.K. Weerakoon, H.K.T.C. Halloluwa</i>
11:15 am - 11:30 am	<b>191</b>	A Review on AI-Driven Prediction and Visualization of Kinase Inhibitor Binding Landscapes <i>M.A.S.D. Jayasundara, R.D. Nawarathna</i>
11:30 am - 11:45 am	<b>203</b>	A Comprehensive Ensemble-Based Approach for Heart Disease Prediction with Feature Selection and Model Analysis <i>Mst. Sazia Tahosin, Ismail Hossain Pranto, Mohamamd Muid Uddin Chowdhury, Sonet Barua</i>

		<i>Emon, Md Ashraful Alam and Chonchal Khan</i>
11:45 am - 12:00 pm	<b>210</b>	Indian Sign Language Alphanumeric Hand Gestures Recognition Using Deep Learning Techniques <i>M. Shakana and M. Ramya</i>
12:00 pm - 12:15 pm	<b>233</b>	ACStyleGAN for Skin Lesion Image Generation <i>Dilmi Abeytunga and Oshada Senaweera</i>
12:15 pm - 12:30 pm	<b>153</b>	A Robust Vision-Based Dynamic Sign Language Recognition Using a Hybrid CNN-LSTM Model <i>R.M.D.H.A. Rajapakshe, P.A.D. Chithrani, J.A.D.S Jayasinghe, U.B. Balagalla, B.Pilanawithana, U.L.Wijewardhana and U. Wijenayake</i>
12:30 pm - 12:35 pm	QA Session	
12:35 pm - 12:45 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 09

**Time** 08.30 am - 12.45 pm

<b>Session</b>	<b>Text Analytics and Natural Language Processing - I</b>	
<b>Session Chair</b>	Dr. Supunmali Ahangama, University of Moratuwa	
<b>Panel Members</b>	Prof. RMKT Rathnayaka, Sabaragamuwa University of Sri Lanka Dr. Samiru Gayan, University of Moratuwa	
<b>Rapporteur</b>	Dr. UA Piumi Ishanka, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mrs. J D Tenushi Erandi	
08:30 am - 08:35 am	Introduction of the Chair	
08:35 am - 09:00 am	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>28</b>	Aspect-Based Sentiment Analysis of Student Reviews on MOOC Platforms <i>A.D.M.B.B. Dissanayake, W.P.A. Fernando</i>
09:15 am - 09:30 am	<b>34</b>	Child's Age Range Prediction Using Sinhala Speech Recognition System. <i>A.D Kathriarachchi and K. Pulasinghe</i>
09:30 am - 09:45 am	<b>132</b>	Systematic Review of Fine-tuning Approaches for Large Language Models in the Context of Sinhala <i>Sachin Hansaka, Deshan Sumanathilaka</i>
09:45 am - 10:00 am	<b>134</b>	Recent Trends and Challenges in Assistive Applications for Sinhala-Speaking Adults with Dyslexia: A Decade in Review <i>P.S. Perera, D. Sumanathilaka</i>
10:00 am - 10:15 am	<b>150</b>	A Review on Leveraging Language Agnostic Automated Text Data Augmentation with Explainable Semantic Integrity <i>W.A.S.M. Wijesundera and S.M. Peiris</i>
10:15 am - 10:30 am	<b>176</b>	IDENTIFICATION AND TRANSLITERATION OF BRAILLE LETTERS INTO SINHALA TEXT <i>D.R.C.G.K.Dampalessa and R.G.Ragel</i>
10:30 am - 10:45 am	<b>232</b>	Ensemble Approach for Religious Hate Speech Detection in Text-Based Images on Facebook <i>Dilushri Pavithra and Roy Smith</i>
10:45 am - 11:00 am	<b>236</b>	Performance Analysis of Text Classification Algorithms for Dhivehi Language Documents <i>Fathimath Rashma Mohamed, Prasanna S. Haddela</i>
11:00 am - 11:15 am	<b>239</b>	A Hybrid Computational Framework Using NLP and ML for Emotion Analysis in Sinhala Songs <i>Malinda Peiris and Deshan Sumanathilaka</i>
11:15 am - 11:30 am	<b>241</b>	Intelligent Document Clustering for Sinhala Text: Combining LLM-based NER with Fuzzy Clustering Techniques <i>R.M.P.P. Rathnayake and P.P.G.D Asanka</i>

11:30 am - 11:45 am	<b>246</b>	Enhancing Resume Analysis: Leveraging Natural Language Processing And Machine Learning for Automated Resume Screening Using KSA Parameters. <i>B.A.T Dilshan, P.P.G.D Asanka</i>
11:45 am - 12:00 pm	<b>266</b>	Robotic Process Automation Activity Recommendation using NLP Techniques <i>H. M. T. S. Herath</i>
12:00 pm - 12:15 pm	<b>311</b>	Enhancing Mobile Wallet Usability through Developer Guidelines: Addressing Challenges in the Sri Lankan Market <i>V.D.V. Samaradiwakara, S. Jayalal and A.S. Withanaarachchi</i>
12:15 pm - 12:30 pm	<b>346</b>	Enhancing AI Classification Performance: A Framework for Textual Data Quality Assessment <i>B.S.M.N. Bibulewela , Dilani Wickramaarachchi and P. P. G. Dinesh Asanka</i>
12:30 pm - 12:35 pm	QA Session	
12:35 pm - 12:45 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 10

**Time** 08.30 am - 12.45 pm

<b>Session</b>	<b>Digital Transformation and Industry 5.0 - I</b>	
<b>Session Chair</b>	Mr. Kavinga Upul Ekanayaka, ACCELR (Pvt) Ltd	
<b>Panel Members</b>	Mr. Dhammika Marasinghe, 99x Technology Ms. Sewwandhi Nanayakara, Sysco LABS	
<b>Rapporteur</b>	Mrs. KG Lohara Chathumini, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. Dumindu Patabandi	
08:30 am - 08:35 am	Introduction of the Chair	
08:35 am - 09:00 am	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>78</b>	Interbank Liability Analyzing Tool To Manage Short-Term Liquidity Among Banks And Facilitate Liability Limits For Daily Operations <i>H.P.S.W. Kumara, K.M. Bamunawita and H.R.L.H. Jayasekara</i>
09:15 am - 09:30 am	<b>83</b>	3D - AI Avatar Attributes Impacting on Bank Customers' Perceived Experience <i>Imesha Imangi, Supun Lakshan, Surasi Muthumini De Silva, H.A.Dimuthu Maduranga Arachchi, and G.D. Samarasinghe</i>
09:30 am - 09:45 am	<b>158</b>	Application of Six Sigma Methodology in the Service Industry to Improve Process Efficiency and Customer Satisfaction: Systematic Review <i>S.M.T. Samarakoon and C.A. Kavirathna</i>
09:45 am - 10:00 am	<b>231</b>	Industry 5.0 Readiness in the Sri Lankan Apparel Industry: A Systematic Literature Review <i>Hiruni Keenavinna, Ruwan Wickramarachchi</i>
10:00 am - 10:15 am	<b>250</b>	The Novel DeepBoost Multi Output Regressor for Household Finance Intelligence <i>S. H. S. V. Suwandarathna, G. O. Priyankara</i>
10:15 am - 10:30 am	<b>272</b>	Impact of Cloud-Based Enterprise Systems on Enhancing Business Model Performance in Retail SMEs <i>H.A.D.J.M. Bandara and C.R. Oruthotaarachchi</i>
10:30 am - 10:45 am	<b>292</b>	Feature Selection in Machine Learning for Wetland Water Level Prediction <i>Lakpriya Weragoda, Dhushintha Ramalingam, Upaka Rathnayake and Damayanthi Herath</i>
10:45 am - 11:00 am	<b>298</b>	Analyzing the Readiness for Digital Twin Implementation in the Apparel Industry: A Systematic Review <i>Dunston Anthonypillailionel, Chalani Ruchira Oruththotaarachi</i>
11:00 am - 11:15 am	<b>299</b>	A Computer Vision Approach for Estimating Embodied Carbon to Support Circular Economy Decisions <i>D. Rajaratnam, R. A. Stewart, T. Liu, A. S. Vieira, I. Amarasinghe</i>
11:15 am - 11:30 am	<b>319</b>	Impact of Industry 4.0 related Drivers on the Performance of the Logistic Sector : A Study of Sri Lankan Context <i>Dinithi Samarathunga, Amila Withanaarachchi</i>

11:30 am - 11:45 am	<b>320</b>	Exploring the Impact of Government Service Website Usability on End-User Satisfaction: A Study of Sri Lankan E-Government Websites in the Education Sector <i>R Adshayan and Y Jayatissa</i>
11:45 am - 12:00 pm	<b>323</b>	Factors Affecting User Experience of Telemedicine: COVID-19 Experience of Healthcare Practitioners in Sri Lanka <i>G.W.S. Hasarinda, Y. Jayatissa and P.P.G.D. Asanka</i>
12:00 pm - 12:15 pm	<b>347</b>	Enhancing Predictive Maintenance in Industry 4.0: Leveraging AI for Optimal Machinery Health Management <i>U.P. Lahiru, C. Rajapakse, Thilini Mahanama, Dinesh Asanka</i>
12:15 pm - 12:30 pm	<b>357</b>	An IoT-Enabled Condition Monitoring Device: Integrating Vibration Analysis and Environmental Sensing <i>M. R. Liyanage, A.W.B.I. Annasiwaththa</i>
12:30 pm - 12:35 pm	QA Session	
12:35 pm - 12:45 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 11

**Time** 08.30 am - 12.45 pm

<b>Session</b>		<b>Computer Networks and Internet of Things - I</b>
<b>Session Chair</b>		Prof. Anuradha Jayakody, Sri Lanka Institute of Information Technology
<b>Panel Members</b>		Mr. Tharindu Nanayakara, Vice President, Cloud Engineering, NeoVizta Mr Dharshana Kasthurirathna, Sri Lanka Institute of Information Technology
<b>Rapporteur</b>		Mr. HMKT Gunawardhana, Sabaragamuwa University of Sri Lanka
<b>Session Coordinator</b>		Miss. HMC Nirmani
08:30 am - 08:35 am		Introduction of the Chair
08:35 am - 09:00 am		Plenary Speech by the Chair
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>31</b>	Feasibility of Solar-Powered LoRaWAN Sensor Nodes in Tropical Countries <i>Niroshan Herath, Sampath Edirisinghe, Akila Wijethunge, Nishan Dharmaweera, Uditha Wijewardhana</i>
09:15 am - 09:30 am	<b>61</b>	Hybrid Machine Learning Approach for Enhanced Vulnerability Detection in Cloud Environments Using NIST and MITRE Frameworks <i>NW Chanaka Lasantha, MWP Maduranga, Ruvan Abeysekara, Valmik Tilwari, Nilotpal Chakraborty, Debashree Sharma</i>
09:30 am - 09:45 am	<b>122</b>	Enhanced Difference Expansion for Secure Secret Sharing and Message Embedding in Digital Images <i>Dimas Wahono, Nazhifah Elqolby</i>
09:45 am - 10:00 am	<b>131</b>	PairStruct: A Steganographic Algorithm Based on Image Structure and Pair-Pixels Difference Expansion <i>Alfarabi Muzli, Adifa Widyadhani Chanda D' Layla, Ntivuguruzwa Jean De La Croix, Tohari Ahmad</i>
10:00 am - 10:15 am	<b>136</b>	A Multi-Model Framework for Synthesizing High-Fidelity Network Intrusion Data Using Generative AI <i>R. Mathushaharan, S. Gayan, S. Edirisinghe, and H. Inaltekin</i>
10:15 am - 10:30 am	<b>145</b>	Cactus Graph Structure to Model Broadband Network Connectivity of Remote Communities <i>U. S. Premarathne</i>
10:30 am - 10:45 am	<b>166</b>	FlexiSecure - AI-Powered Fraud Detection with Real-Time Alerts and Customizable Security. <i>N. Mumthas</i>
10:45 am - 11:00 am	<b>186</b>	Bovitrack: Animal behavior monitoring using Machine learning and IoT. <i>Harsha Viraj, Sumuduni Wijesekara, Kuluni Tharuka, Shenika Fernando, Anuradha Jayakody and Pipuni Wijesiri</i>
11:00 am - 11:15 am	<b>188</b>	SafeHome: Automation and Security System using Internet of Things with Mobile Application <i>Patricia A. Abas, Bryll Christopher O. Reyes, Jazzy Serquiña, Juliet O. Niega, Oliver A. Medina</i>
11:15 am - 11:30 am	<b>196</b>	Multispectral Images and IoT Based Tea Plantation Monitoring: A Proposed System Architecture

		<i>K.P.W.D.V. Kariyawasam, P.N. Kahandagamage, M.R.R. Fernando, J.M. Fernandopulle, Vishan Jayasinghearachchi and Kapila Dissanayaka</i>
11:30 am - 11:45 am	<b>197</b>	RiderRescue: Motorcycle Crash Detection for Emergency Response Using Support Vector Machine Algorithm in MATLAB <i>Jose Elmar S. Acuno, Klenz Andrei G. Andaya, Clarence Glenford A. Bueza, Krystal S. Roa, Juliet O. Niega, Mark Angelo T. Mercado</i>
11:45 am - 12:00 pm	<b>206</b>	Real-Time Alum Dosage Optimization Using IoT-Enabled Water Quality Sensing Device <i>HHC Gunathilaka, HT Kodikara, GRMNND Ranaweera, DWNT Wijethunga, Charithri Yapa, Bhathiya Pilanawithana, Nishan Dharmaweera</i>
12:00 pm - 12:15 pm	<b>219</b>	Scalable Convolutional Neural Network Inference on-the-Edge using Low-Density FPGAs <i>S. A. U. R. Suraweera Arachchi, W. A. S. Wijesinghe</i>
12:15 pm - 12:30 pm	<b>223</b>	Pairing-Free Certificateless Data Auditing for Fog assisted Cyber Physical Systems <i>Junaid Alam, S. Maity, and S. Venkatesan</i>
12:30 pm - 12:35 pm	QA Session	
12:35 pm - 12:45 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 14

**Time** 08.30 am - 12.45 pm

<b>Session</b>	<b>Open - I</b>	
<b>Session Chair</b>	Dr. PLM Prabhani, University of Sri Jayewardenepura	
<b>Panel Members</b>	Dr. Ravimal Bandara, University of Sri Jayewardenepura Mr. Bhanuka Dayawansa, Curtin University Colombo	
<b>Rapporteur</b>	Miss PMAK Wijeratne, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. Pasindu Balasooriya	
08:30 am - 08:35 am	Introduction of the Chair	
08:35 am - 09:00 am	Plenary Speech by the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
09:00 am - 09:15 am	<b>16</b>	A New Era of Productive Learning Focused on the Retention of Attention Span: VerbaSure <i>S. Premnath, K. Ekanayake, T. Pieris, E. Hettiarachchi and K.P. Hewagamage</i>
09:15 am - 09:30 am	<b>108</b>	Uniting Digital Disciplines: Bridging Literacy, Ethics, and Security Among University Students <i>Hansi Munasinghe, Kaushalya Hewawasam</i>
09:30 am - 09:45 am	<b>109</b>	Channel Adaptive Decoding in Underwater Optical Camera Communication Systems <i>Thimuthu Aberathna, Miyuni Kumaraage and Nuwan Atthanayake</i>
09:45 am - 10:00 am	<b>130</b>	WaveCryptor: A Secure Hybrid Framework Combining Encryption and Steganography via Frequency Mapping <i>WDSS Pemasinghe</i>
10:00 am - 10:15 am	<b>177</b>	The Influence of Generative AI on work-life balance among female software professionals in Sri Lanka <i>W.A.S Upeksha, K.P.D.T Samarasinghe, T.G.M Sanochana, S.A.D.S.N Samarathunga, L. Rajamanthri, T. Samarakkody and C. Aluthwala</i>
10:15 am - 10:30 am	<b>192</b>	BAHAGAP: Design and Development of an Image Processing-Based Detection and Monitoring System for Early Flood Warnings in High-Risk Zones <i>Juliet Niega ,Jan Ricky Almazan ,Racell Saludes ,Jeru Pohl Avanzado ,Jan Cloyd Naval ,Nuel Jayson Alcantara</i>
10:30 am - 10:45 am	<b>193</b>	Design And Development Of RWMS: A Residential Wastewater Management System with Filtration and Water Quality Monitoring <i>S.J.A. Author, J.P.B. Author, P.R.C. Author, S.L Author, J.O.N. Author and M.T.M. Author</i>
10:45 am - 11:00 am	<b>205</b>	A Conceptual Design Framework for an Enhanced Hearing Aid Application Using Selective Sound Amplification <i>D.S. Gamage, A.M.A.D Bandara and T.A. Weerasinghe</i>
11:00 am - 11:15 am	<b>238</b>	Image Processing and CNN based Anxiety, Depression, and Hypertension Identification through Iridology : A Systematic Review <i>KPI Nethra and DVDS Abeysinghe</i>

11:15 am - 11:30 am	<b>254</b>	The Factors Influencing Green IT Adoption in IT organizations in Sri Lanka <i>Thennila Mathimaaran, Yehemini Jayatissa</i>
11:30 am - 11:45 am	<b>259</b>	Very Short-Term Surplus Energy Forecasting for Peer-to-Peer Energy Trading in Microgrids <i>T. Sajarupan, M.P.P. Liyanage, A.H Wijethunga, J. B. Ekanayake and B.W.H.A. Rupasinghe</i>
11:45 am - 12:00 pm	<b>274</b>	Enhancing Student Engagement in Sri Lankan Higher Education Through IoT: UTAUT Model <i>K.D.B. Aratthanage, B.M.G.S.T.S.K. Wickramasinghe, H.R.S. Senanayake, P.T.R. Dabare, W.A.L.P. Fernando, N.M. Siyad</i>
12:00 pm - 12:15 pm	<b>280</b>	Impact of Moodle's Usability on Student Satisfaction in Sri Lankan Universities <i>Ahamed Zalje, Yehemini Jayatissa</i>
12:15 pm - 12:30 pm	<b>324</b>	Unveiling Candidates' Traits and KSA Mapping Through Video Analysis in Interviews <i>P.H.C.D.S. Abeygunawardhana, D. Asanka</i>
12:30 pm - 12:35 pm	QA Session	
12:35 pm - 12:45 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 08

**Time** 01.30 pm - 04.25 pm

<b>Session</b>	<b>Artificial Intelligence and Machine Learning - II</b>	
<b>Session Chair</b>	Dr. Damayanthi Herath, University of Peradeniya	
<b>Panel Members</b>	Professor BTGS Kumara, Sabaragamuwa University of Sri Lanka Dr. Wijendra Gunathilake, General Sir John Kotelawala Defence University Dr. Asitha Bandaranayake, University of Peradeniya	
<b>Rapporteur</b>	Mrs. WVSK Wasalthilaka, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. WD Dimuthu Lakshan	
01:30 pm - 01:35 pm	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:35 pm - 01:50 pm	<b>271</b>	Underwater Image Enhancement Using Depth Estimation and a Transformer-GAN Model <i>S. Pushpanayagam, T. Kokul, A. Ramanan, and U.A.J. Pinidiyaarachchi</i>
01:50 pm - 02:05 pm	<b>279</b>	Predictive Modeling for Identifying Early Warning Signs of Underperformance in Vocational Education <i>D. S. S. Hettiarachchi, S. M. B. Harshanath</i>
02:05 pm - 02:20 pm	<b>288</b>	Color and Grayscale Pencil Image Translation Into Realistic Images Using Generative Adversarial Networks. <i>R.K.B. Yeshani, Charith Chiththranjan</i>
02:20 pm - 02:35 pm	<b>289</b>	A Multi-Model Automated Framework for Scalable and Robust Outlier Detection in Data Warehousing <i>W.W.A.D.R. Fernando, and P.P.G.D. Asanka</i>
02:35 pm - 02:50 pm	<b>294</b>	Developing Predictive Models for Future Stress Likelihood and Recovery Time Using Behavioral and Emotional Data. <i>Weerasinghe W. P. D. J. N., Gunasekera H. D. P. M., Wickramasinghe B. G. W. M. C. R., Jayathunge K. A. D. T. R., Pipuni Wijesiri, Thamali Dassanayake</i>
02:50 pm - 03:05 pm	<b>321</b>	Deep Learning Based Export Oriented Guppy Fish Health Classification Method <i>K. I. C. Gunathilaka, R. A. P. Buddhika</i>
03:05 pm - 03:20 pm	<b>325</b>	Vibration-Based Failure Prediction in Machinery: Novel Application of Time Series Decomposition and Neural Networks <i>W.C.Nirmal, H.K.I.S.Lakmal and K.J.P.Fernando</i>
03:20 pm - 03:35 pm	<b>326</b>	Advanced Techniques for Kingfisher Species Identification Using Machine Learning and Deep Learning. <i>C.S. Vidanagamachchi, W.G. D Chathuranga, L.L.G. Chathuranga, K.T.A.S. Jayathilake, R.B. Yeshani and S.M. Vidanagamachchi</i>
03:35 pm - 03:50 pm	<b>379</b>	Deep Learning-Based Road Sign Detection & Recognition System for Autonomous Vehicles <i>P.G.B.A.H.Jayarathne and R.A.Prabhath Buddhika</i>
03:50 pm - 04:05 pm	<b>388</b>	Enhancing Human Emotion Detection in Audio Data with Deep Neural Networks Using Cross-Dataset <i>Sandushi Weraduwa, Minuli Kanangara, Shiran SuriyaPathiraja and Thilini V.Mahanama</i>

04:05 pm - 04:15 pm	QA Session
04:15 pm - 04:25 pm	Summing up by the Chair

**Day** 20th February 2025

**Venue** Lecture Hall Number 09

**Time** 01.30 pm - 03.15 pm

<b>Session</b>		<b>Text Analytics and Natural Language Processing - II</b>
<b>Session Chair</b>		Dr. Supunmali Ahangama, University of Moratuwa
<b>Panel Members</b>		Dr. Buddhitha Hettige, General Sir John Kotelawala Defence University Dr. Suneth Pathirana, Uwa Wellasa University
<b>Rapporteur</b>		Dr. UA Piumi Ishanka, Sabaragamuwa University of Sri Lanka
<b>Session Coordinator</b>		Mrs. J D Tenushi Erandi
01:30 pm - 01:35 pm		Introduction of the Chair
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:35 pm - 01:50 pm	<b>363</b>	Influence Ranking of Hate Users in Content Propagation on Twitter <i>S. Perera, I. Perera and S. Ahangama</i>
01:50 pm - 02:05 pm	<b>252</b>	Identification of the severity level of a hate text by YouTubers <i>S. Perera, A. Varatharaj, I. Perera and S. Ahangama</i>
02:05 pm - 02:20 pm	<b>244</b>	Generative AI based mobile application for vehicle breakdown and maintenance assistance <i>Amindu Weerawardhana and Pradeep Pallegama</i>
02:20 pm - 02:35 pm	<b>129</b>	Deep Learning based Song Recommendation System for Emotions of the Listener <i>L. A. T. Perera, M. Mervyn, A. Welhenge and A.Taparugssanagorn</i>
02:35 pm - 02:50 pm	<b>95</b>	A Comprehensive Review of Bias Detection and XAI Techniques in NLP <i>Loganathan Bhavaneetharan</i>
02:50 pm - 03:00 pm		QA Session
03:00 pm - 03:15 pm		Summing up by the Chair

**Day** 20th February 2025

**Venue** Lecture Hall Number 10

**Time** 01.30 pm – 03.30 pm

<b>Session</b>	<b>Digital Transformation and Industry 5.0 - II</b>	
<b>Session Chair</b>	Mr. Kavinga Upul Ekanayake, ACCELR (Pvt) Ltd	
<b>Panel Members</b>	Mr. Dhammika Marasinghe, 99x Technology Ms. Sewwandhi Nanayakara, Sysco LABS	
<b>Rapporteur</b>	Mrs. KG Lohara Chathumini, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. Dumindu Patabandi	
01:30 pm - 01:35 pm	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:35 pm - 01:50 pm	<b>366</b>	Efficiency Evaluations in 3PL Warehouse Operations: Building Research Themes Through Systematic Literature Review. <i>R. de Abrew, C. Kavirathna, A. Wijayanayake and K. Abhilashani</i>
01:50 pm - 02:05 pm	<b>383</b>	Towards Sustainable Software Testing Practices in IT Firms <i>W.P.P.M. Pathirana, and Yehemini Jayatissa</i>
02:05 pm - 02:20 pm	<b>90</b>	Bibliometric Analysis of Sustainable Digital Technologies for Reducing Waste in the Food Supply Chain. <i>Kavith Balachandra, Niles Perera</i>
02:20 pm - 02:35 pm	<b>103</b>	Empirical Evaluation of Deep Learning Models for Long-Term Solar Power Generation Forecasting <i>P.D.C.G. Karunathilaka and S. Wickramanayake</i>
02:35 pm - 02:50 pm	<b>283</b>	IoT Based Smart Waste Bins for Smart Waste Management in Sri Lanka. <i>H.P.B.D. Hemapriya, D.S. Hewaranaweera, N.T.M. Sajith, A.M.A. Saja and M.N.M. Aashiq</i>
02:50 pm - 03:05 pm	<b>332</b>	IntelliCross :Adaptive Pedestrian Crossing System <i>Udayanga Dissanayake, Dinusha Weerasekara, Hansika Sumanasekara, Dodamgoda Ishara, Pipuni Wijesiri and Menaka Moonamaldeniya</i>
03:05 pm - 03:15 pm	QA Session	
03:15 pm - 03:30 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 11

**Time** 01.30 pm - .03.00 pm

<b>Session</b>	<b>Computer Networks and Internet of Things - II</b>	
<b>Session Chair</b>	Prof. Anuradha Jayakody, Sri Lanka Institute of Information Technology	
<b>Panel Members</b>	Dr. Tharaga Sharmilan, University of Kelaniya Mr. Tharindu Nanayakara, Vice President, Cloud Engineering, NeoVizta Ms Shashika Lokuliyange, Sri Lanka Institute of Information Technology	
<b>Rapporteur</b>	Mr. HMKT Gunawardhana, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Miss. SA Dinithi Ravindra	
01:30 pm - 01:35 pm	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:35 pm - 01:50 pm	<b>276</b>	Customizable DDoS Attack Data Generation in SDN Environments for Enhanced Machine Learning Detection Models <i>P.N Gayantha, C. Rajapakse and J. Senanayake</i>
01:50 pm - 02:05 pm	<b>333</b>	Towards Sustainable Radio Access Networks: Enabling Technologies and Open Challenges <i>Karunaharan Vithusan, Samiru Gayan and Sampath Edirisinghe</i>
02:05 pm - 02:20 pm	<b>171</b>	An Application to Integrate Remote Vital Signs in a Real-Time Video Telehealth Call <i>L. Sutton, A. Welhenge and N. Fernando</i>
02:20 pm - 02:35 pm	<b>385</b>	Cybersecurity for Cloud-Based IoT Devices: Views from IT Professionals <i>A.W. S. Aamina, K.S. Lasith Gunawardena and Nalin Arachchilage</i>
02:35 pm - 02:45 pm	QA Session	
02:45 pm - 03:00 pm	Summing up by the Chair	

**Day** 20th February 2025  
**Venue** Lecture Hall Number 14  
**Time** 01.30 pm - 03.15 pm

<b>Session</b>	<b>Open - II</b>	
<b>Session Chair</b>	Dr. PLM Prabhani, University of Sri Jayewardenepura	
<b>Panel Members</b>	Ms. Abarnah Kirupananda, Informatics Institute of Technology Ms. Samantha Wikramasinghe,ESOFT Metro Campus, Sri Lanka	
<b>Rapporteur</b>	Mr. PMAK Wijeratne, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mr. Pasindu Balasooriya	
01:30 pm - 01:35 pm	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
01:35 pm - 01:50 pm	<b>328</b>	Agent-Based Modeling of Human-Elephant Conflict Dynamics: A Simulation Approach Using NetLogo <i>W.W.A.D.R Fernando, R.A.C.P. Rajapakse, U.P Lahiru, D.M.T.W. Ariyaratne, N.S WJjerama ,B.A.T Dilshan</i>
01:50 pm - 02:05 pm	<b>371</b>	An Agent-Based Model to Address the Gap in Internship Opportunities for IT Undergraduates in Sri Lanka <i>Sandushi Weraduwa, Nadeera Gayantha, Kavindu Piyumantha, Minuli Kannangara and Chathura Rajapaksa</i>
02:05 pm - 02:20 pm	<b>375</b>	A Game Centric E-Learning Application For Preschoolers <i>N. Kodagoda, D.I. De Silva, D.A.M.N. Kulasekara, P.G.I. Nipun, H.M.D.L.B.A. Dombawela and G. S. Manilka</i>
02:20 pm - 02:35 pm	<b>376</b>	Evaluating Blockchain Integration for Enhanced Security and Transparency in ERP Systems: A Systematic Review Across Manufacturing, Healthcare, and Finance Domains <i>G.W. Wickramakalutota and C.R. Oruthotaarachchi</i>
02:35 pm - 02:50 pm	<b>386</b>	Optical Observation for Body Angles of Cricket Players' Motion to Identify the Batting Shots <i>J.I. Randika, D.K.A. Induranga, G.D.K.V. Maduwantha, B.T.G.S. Kumara</i>
02:50 pm - 03:00 pm	QA Session	
03:00 pm - 03:15 pm	Summing up by the Chair	

**Day** 20th February 2025

**Venue** Lecture Hall Number 08

**Time** 04.30 pm - 06.45 pm

<b>Session</b>	<b>Artificial Intelligence and Machine Learning - III</b>	
<b>Session Chair</b>	Professor Jayalath Ekanayake, UWA Wellassa University	
<b>Panel Members</b>	Dr Suneth Pathirana, UWA Wellassa University Mr. S Nimishan, Sabaragamuwa University of Sri Lanka	
<b>Rapporteur</b>	Mrs. W.T.S. Somaweera, Sabaragamuwa University of Sri Lanka	
<b>Session Coordinator</b>	Mrs. W.M.L Shehara Abethunga , Sabaragamuwa University of Sri Lanka	
04:30 pm - 04:35 pm	Introduction of the Chair	
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Authors</b>
04:35 pm - 04:50 pm	<b>403</b>	AYURVEDIC PLANT IDENTIFICATION THROUGH DEEP LEARNING APPROACHES A CASE STUDY IN SRI LANKA <i>M.Thanujan, J.Yukatharsana, W.A.Sanjeewa and M.Janotheepan</i>
04:50 pm - 05:05 pm	<b>56</b>	Evaluation of Machine Learning Models in Student Academic Performance Prediction <i>A.G.R. Sandeepa, S.D. Mohottala</i>
05:05 pm - 05:20 pm	<b>394</b>	Infrared-Augmented CycleGAN (IRACycle GAN) for Unpaired Night-to-Day Image Translation <i>K.J.P.Fernando, H.K.I.S.Lakmal and W.C.Nirmal</i>
05:20 pm - 05:35 pm	<b>291</b>	Machine Learning Approach to Identify the Incidence of Human Deaths Due to Human-Elephant Conflicts <i>W. A. D. M. Lakshitha, N.V. Chandrasekara, D.M.P.V. Dissanayaka and H.W.B. Kavinga</i>
05:35 pm - 05:50 pm	<b>101</b>	Arthropodia-V1: Biodiversity dataset for semantic segmentation, quality estimation, and observation extraction <i>Mohamed Ayoob, Tomas Maul and Tissa Chandesa</i>
05:50 pm - 06:05 pm	<b>159</b>	A STATISTICAL FEATURE EXTRACTION APPROACH USING BIRD FLIGHT CALLS <i>K.M.L.K. Mahanayake and S.P Abeyesundara</i>
06:05 pm - 06:20 pm	<b>167</b>	Evaluating HLS4ML For Converting a CNN Model Into High Level Synthesis <i>Noura Jariri, Mohammed Chaman, Rania Majdoubi, and Abdelkader Hadjoudja</i>
06:20 pm - 06:35 pm	QA Session	
06:35 pm - 06:45 pm	Summing up by the Chair	

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