ICARC

International Conference on Advanced Research in Computing

3rd International Conference on Advanced Research in Computing

ICARC 2023

"Digital Transformation for Sustainable Development"

PROGRAMME BOOK

23rd & 24th February 2023
Faculty of Computing
Sabaragamuwa University of Sri Lanka

ICARC - 2023
"Digital Transformation for Sustainable Development"

3RD INTERNATIONAL CONFERENCE ON
ADVANCED RESEARCH IN COMPUTING

23RD - 24TH FEBRUARY 2023
FACULTY OF COMPUTING, SABARAGAMUWA UNIVERSITY OF SRI LANKA,
BELIHULOYA, SRI LANKA

Conference Programme at a Glance

	Day 01	Day 02
	23ʳᵈ February, 2023	**24ᵗʰ February, 2023**
08.00 – 08.30		
08.30 – 09.00	**Technical Session 01**	
09.00 – 09.30	**Parallel and Distributed Computing**	**Technical Session 02**
09.30 – 10.00	**Knowledge Management and Information Systems**	**Technology-enhanced Learning and Teaching** **Software Engineering** **Human-Computer Interaction and Computer Vision**
10.00 – 10.30	**Artificial Intelligence and Machine Learning – I**	**Open**
10.30 – 11.00		**Industry R&D Track**
11.00 – 11.30	**Text Analytics and Natural Language Processing**	
11.30 – 12.00	**Data Analytics**	
12.00 – 12.30	**Lunch**	**Lunch**
12.30 – 01.00		
01.00 – 02.00		**Technical Session 03**
02.00 – 02.30	**Welcome Tea**	**Artificial Intelligence and Machine Learning – II**
02.30 – 03.00	**Inauguration**	**Computer Vision and Image Processing Track** **Internet of Things and Applications**
03.00 – 03.30		**Tea**
03.30 – 04.00		
04.00 – 04.30		
04.30 – 05.00		
05.00 – 05.30		
05.30 – 06.00		
06.00 onwards	**Dinner**	

Plenary Speech Schedule

	Plenary Speaker	Moderator	Date and Time
Plenary Talk 01	Dr Windhya Rankothge	Ms S Wasalthilake	23rd February 2023 08.30 am – 08.50 am
Plenary Talk 02	Dr EMUWJB Ekanayake	Dr Thilini Bhagya	23rd February 2023 08.30 am – 08.50 am
Plenary Talk 03	Prof Prasad Jayaweera	Prof BTGS Kumara	23rd February 2023 08.30 am – 08.50 am
Plenary Talk 04	Dr Sagara Sumathipala	Mr K Banujan	23rd February 2023 08.30 am – 08.50 am
Plenary Talk 05	Dr Chathura Rajapaksha	Prof Kapila Rathnayaka	23rd February 2023 08.30 am – 08.50 am
Plenary Talk 06	Dr Kalpani Manathunga	Dr UAP Ishanka	24th February 2023 09.00 am – 09.20 am
Plenary Talk 07	Dr Dasuni Nawinna	Dr RAHM Rupasingha	24th February 2023 09.00 am – 09.20 am
Plenary Talk 08	Dr Kasun Karunanayake	Ms UP Kudagamage	24th February 2023 09.00 am – 09.20 am
Plenary Talk 09	Dr Pradeep Kalansooriya	Ms R Nirubika	24th February 2023 09.00 am – 09.20 am
Plenary Talk 10	Ms Heshani Mahalaksha	Dr Sugeeswari Lekamge,	24th February 2023 09.00 am – 09.20 am
Plenary Talk 11	Dr Lochandaka Ranatunga	Prof BTGS Kumara	24th February 2023 01.00 pm – 01.20 pm
Plenary Talk 12	Prof A Ramanan	Ms PMAK Wijeratne	24th February 2023 01.00 pm – 01.20 pm
Plenary Talk 13	Dr Tharinda Vidanagama	Mr P Vigneshwaran	24th February 2023 01.00 pm – 01.20 pm

Workshops and Tutorials Schedule

Date	Title and Resource persons	Description
20th of January 2023	**Title: Learner-Centered Edtech Design using Learning Analytics and Human-Computer Interaction: A case study of MOOCs** Speaker: Dr. Dilrukshi Gamage, Tokyo Institute of Technology, Japan	Education Technologies based on Learner-centered designs are capable of focusing individuals and improving the learning effectiveness while scaling the number of learners. The effectiveness of such systems is based on not just the content, but also the interactions designed to cater to individuals with a smooth learning experience. A key component of such a system involves providing timely information to educational stakeholders (teachers, students, designers, administrators) to support better decision-making that uses LA and having an interface design that interacts with the stakeholders to operationalize such decisions and take actions that base on HCI. In this workshop, participants will understand how to leverage methods in Human-Computer Interactions and Learning Analytics in designing effective education technologies to serve learning at scale.
9th of February 2023	**Title: Object Detection/classification with Deep-Learning and 3D Point Cloud Data** Speaker: Prof. Chinthaka Premachandra, Shibaura Institute of Technology, Japan	Point cloud data (PCD) can be applied for 3D object detection and classification using deep learning (DL). While treating the PCD to DL, down sampling, normalization, principal component analysis (PCA) and some other preprocessing are applied on PCD to reduce training time and enhance the features in the point cloud. This workshop mainly discusses those preprocessing methods and some applications of PCD to 3D object detection and classification using them.
16th of February 2023	**Title: Demonstrating Gender-based Diversity, Equity, Inclusion & Belonging to unleash the collective Systemic potential!** Speaker: Ms. Anushly Sithamparam,Org and Relationship Systems Team Coach,(Mentor Coach, Coach Supervisor-ICF,EMCC)ICF PCC Assessor,	The system has been co-created with multiple elements, including biases and social conditioning. As we evolve, what was best yesterday is no more the best for today or tomorrow. The graduates and the academia play a vital role

	Coach Developer	in ensuring the upcoming generation is well-prepared to face reality and create a new reality in alignment with what will serve the common purpose of the system and the greater good which includes the planet, people, potential, and possibility. Come and join the conversation to co-create an unbiased system through the young ambassadors who would stand up and show up without bias and nurture with mindful Compassion and Empathy to support human well-being with the co-creation of technology.
18ᵗʰ of February 2023	**Title: Internet of Things - Theory and Practice** Resource Person: Dr Samiru Gayan	The Internet of Things (IoT) describes a network of physical objects – 'things' – that are embedded with sensors, software, and other technologies to connect and exchange data with other devices and systems over the internet. Over the past few years, IoT has become one of the most important technologies of the 21st century, where IoT touches everything and everything has IoT. Given the high demand in the area and future potential, the objective of this half-day tutorial is to provide the fundamental theory and practical knowledge required to develop and deploy real-world IoT solutions for modern-day use cases.
20ᵗʰ of February 2023	**Title: Software Reliability Detection and Mitigation in Distributed Platforms** Resource Person: Dr U.S. Premarathne	Software reliability engineering is a well-established branch of study. With the advent of scalable distributed platforms, reliable service delivery with less failure rates are highly demanded. Failure detection, recovery and mitigation mechanisms are sought after to help the developers to create more reliable products/services and for the users to enjoy the products/services seamlessly. This tutorial aims to discuss the approaches in software failure recovery and mitigation considering the stand alone and the cloud based distributed systems considering dependencies on

		resources, platforms and networks. Outcome of this discussion is to share the insights related to the recent advancements in software reliability engineering.
23rd of February 2023	**Title: Identification of Hate Speech in Social Media** Resource Persons: Dr. Lochandaka Ranathunga, Dr. Supunmali Ahangama, Ms. Sandunika Hathnapitiya, Ms. Suresha Perera, Ms. Nirupama Rajapaksha, Mr. Maneesha Caldera	Social media can be used as a tool for democratic and unrestricted expression. However, one of the clearest signs of a society lacking in democracy is the presence of hate speech in regular conversation. In hate speech, an individual or group is attacked because of their ethnicity, religion, sexual orientation, or gender. Due to people's increased reliance on social media for rapid information dissemination, hate speech on it is a problem that is growing more and more common. Additionally, when compared to hate speech that occurs offline, the impact of hate speech online is greater. The rise of hate crimes in society is significantly impacted by the rise of hate speech on social media. In light of recent incidents in Sri Lanka and around the world, it will be beneficial to society if an accurate, effective approach to limiting the creation and dissemination of hate content on social media can be developed. Using human-centred methods to identify hate content is impractical given the vast amount of social media information posted every second. Thus, to find hate content on social media, automated methods would be needed. The numerous methods used to collect data from social media, the annotation techniques used to categorize the data set into different hate categories and severity levels, and the classification models and methodologies will all be covered in this workshop

Technical Sessions

Day		23ʳᵈ February 2023
Venue		LT 202
Time		8.30 am – 09.30 am
Session		**Parallel and Distributed Computing**
Session Chair		Dr Windhya Rankothge Assistant Professor Canadian Institute for Cybersecurity
Panel Members		Mr Kanishka Yapa Lecturer Sri Lanka Institute of Information Technology
Rapporteur		Ms S Wasalthilake Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
Session Coordinator		Ms KS Ranasinghe Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
8.30 am – 8.35 am		Introduction of the Chair
8.35 am – 8.55 am		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
8.55 am - 9.10 am	**201**	Security Issues and Mitigation Mechanisms in Distributed Systems *VN Mahaliyanaaarachchi*
09.10 am – 09.20 am		QA Session
09.20 am – 09.30 am		Summing up by the Chair

Day	23rd February 2023
Venue	LT 203
Time	08.30 am - 10.15 am
Session	**Knowledge Management and Information Systems**
Session Chair	Dr EMUWJB Ekanayake Senior Lecturer Uva Wellassa University
Panel Members	Prof Lasith Gunawardena Professor University of Sri Jayewardenepura
Rapporteur	Dr Thilini Bhagya Senior Tutor University of Canterbury Massey University New Zealand
Session Coordinator	Ms R Nirubika Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
08.30 am – 08.35 am	Introduction of the Chair
08.35 am – 08.55 am	Plenary Speech by the Chair

Time	Paper ID	Paper Title and Authors
08.55 am - 09.10 am	**78**	Effects of the Organizational Knowledge Management Systems on Psychological Well-Being Among Employees in Private Large-Scale IT Organizations in Sri Lanka *KDB Aratthanage and J Wijekoon*
09.10 am – 09.25 am	**113**	Factors Affecting ERP Systems Adoption in Organizations in the Face of Economic Crisis: A Systematic Literature Review *NB Opatha and AS Withanaarachchi*
09.25 am - 09.40 am	**146**	Role of Blockchain Technology in ERP Systems for a Transparent Supply Chain: A Systematic Review of Literature *Ruwanthi Perera, KR Nawurunnage, Sanjaya Chathuranga, Ruwan Wickramarachchi and Amila Withanaarachchi*
09.40 am – 09.55 am	**204**	Travel Recommendation System for Domestic Travelers in Sri Lanka *RPEI Premakumara, JB Ekanayake and AMDB Nawarathna*
09.55 am – 10.05 am		QA Session
10.05 am – 10.15 am		Summing up by the Chair

Day		23rd February 2023
Venue		LT 204
Time		08.30 am – 11.00 am
Session		**Artificial Intelligence and Machine Learning – I**
Session Chair		Prof Prasad Jayaweera Professor University of Sri Jayewardenepura
Panel Members		Dr Pulasthi Gunawardhana Senior Lecturer University of Sri Jayewardenepura Dr US Premaratne Senior Lecturer The Open University of Sri Lanka
Rapporteur		Prof BTGS Kumara Professor Sabaragamuwa University of Sri Lanka
Session Coordinator		Mr S Prashanth Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
08.30 am – 08.35 am		Introduction of the Chair
08.35 am – 08.55 am		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
08.55 am – 09.10 am	189	Accuracy Comparison between Recurrent Neural Networks and Statistical Methods for Temperature Forecasting *Isurika Adikari, Sumudu Lakmali, Praveen Dhananjaya and Damayanthi Herath*
09.10 am – 09.25 am	203	Automatic Emotion Recognition System: A Cross Culture Study between Tamil and Russian Speaking Children *Ruban Nersisson , Prithiraj Bhuyan, A. Mary Mekala and Elena Lyakso*
09.25 am - 09.40 am	157	Chronic Kidney Disease Detection using Machine Learning Algorithms: A Sri Lankan Study *DV Dissanayake, S Sobana, B Yogarajah and R. Nagulan*
09.40 am - 09.55 am	103	CRICSQUAD: A System to Recommend Ideal Players to A Particular Match and Predict the Outcome of the Match *EL Lekamge, KR Wickramasinghe, SE. Gamage, TMKL. Thennakoon, Prasanna S Haddela and Sandamini Senaratne*
09.55 am – 10.10 am	82	Emotion Classification Comparison in Convolutional Neural Networks and Fuzzy Logics for Service Robotic Applications *Kumar Abhishek and EJGS. Appuhamy*
10.10 am – 10.25 am	59	Fine-Tuning XLM-R for the Detection of Sinhala Hate Speech Content on Twitter and Youtube *Nirupama Rajapaksha, Supunmali Ahangama and Shalinda Adikari*
10.25 am - 10.40 am	36	Human Stress Detection Based on Sleeping Habits Using Machine Learning Algorithms *JG Jayawickrama and RAHM Rupasingha*
10.40 am – 10.50 am		QA Session
10.50 am – 11.00 am		Summing up by the Chair

Day	23rd February 2023
Venue	LT 103
Time	08.30 am – 11.00 am
Session	**Text Analytics and Natural Language Processing**
Session Chair	Dr Sagara Sumathipala Senior Lecturer University of Moratuwa
Panel Members	Dr Suneth Pathirana Senior Lecturer Uva Wellassa University Dr Budditha Hettige Senior Lecturer General Sir John Kotelawala Defence University
Rapporteur	Mr K Banujan Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
Session Coordinator	Mr S Nimishan Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
08.30 am – 08.35 am	Introduction of the Chair
08.35 am – 08.55 am	Plenary Speech by the Chair

Time	Paper ID	Paper Title and Authors
08.55 am – 09.10 am	121	Early Detection of Sinhala Fake News in Social Media *Sandunika Hathnapitiya, Supunmali Ahangama and Shalinda Adikari*
09.10 am – 09.25 am	91	Evaluating the Economic Disparities in the World: Sentiment Analysis on Central Bank Speeches from Third World and First World Countries *Krish Vazirani*
09.25 am – 09.40 am	172	Influence Rank of Hate Users in Twitter: An Analysis during Sri Lanka's Political and Economic Crisis *Suresha Perea, Indika Perera and Supunmali Ahangama*
09.40 am - 09.55 am	124	Swa-Bhasha: Romanized Sinhala to Sinhala Reverse Transliteration Using a Hybrid Approach *TGDK Sumanathilaka, R. Weerasinghe and HYPP Priyadarshana*
09.55 am - 10.10 am	43	TacoSi: A Sinhala Text to Speech System with Neural Networks *Tharuka Kasthuri Arachchige and Ruvan Weerasinghe*
10.10 am - 10.25 am	184	Tamil Grammarly – A Typing Assistant for Tamil Language Using Natural Language Processing *Praveen Mahadevan, Parameswaran Srihari, Krishnathasan Seyon, Parthipan Vasavan and Rrubaa Panchendrarajan*
10.25 am - 10.40 am	148	Twitter Mining for Detecting Home Violence *S Adeeba, Kuhaneswaran Banujan, BTGS Kumara and Zhenni Li*
10.40 am – 10.50 am		QA Session
10.50 am – 11.00 am		Summing up by the Chair

Day	**23ʳᵈ February 2023**
Venue	LT 102
Time	8.30 am - 9.45 am
Session	**Data Analytics**
Session Chair	Dr Chathura Rajapaksha Senior Lecturer University of Kelaniya
Panel Members	Dr Vasana Chandrasekara Senior Lecturer University of Kelaniya
Rapporteur	Prof Kapila Rathnayaka Professor Sabaragamuwa University of Sri Lanka
Session Coordinator	Ms PBSN Ariyathilake Lecturer (Probationary) Sabaragamuwa University of Sri Lanka
8.30 am – 8.35 am	Introduction of the Chair
8.35 am – 8.55 am	Plenary Speech by the Chair

Time	Paper ID	Paper Title and Authors
8.55 am – 9.10 am	**112**	Classification of Batters Format-Wise Based on Ball-Wise Striking Performance *DY Jayasinghe, RM Silva and CL Jayasinghe*
9.10 am – 9.25 am	**206**	Electric Vehicle Charging Scheduling Using Branch and Cut Algorithm *Adhyan Vijeta Mittal, Animisha Sharanappa, Konish Bagchi, Senthil Prabu Ramalingam and Prabhakar Karthikeyan Shanmugam*
9.25 am – 9.35 am		QA Session
9.35 am – 9.45 am		Summing up by the Chair

Day		24th February 2023
Venue		LT 102
Time		09.00 am – 10.45 am
Session		**Technology-enhanced Learning and Teaching**
Session Chair		Dr Kalpani Manathunga Assistant Professor Sri Lanka Institute of Information Technology
Panel Members		Dr Wijendra Gunathilaka Senior Lecturer General Sir John Kotelawala Defence University. Dr Anuradha Karunasena Assistant Professor Sri Lanka Institute of Information Technology
Rapporteur		Dr UAP Ishanka Senior Lecturer Sabaragamuwa University of Sri Lanka
Session Coordinator		Ms S Wasalthilake Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
09.00 am – 09.05 am		Introduction of the Chair
09.05 am – 09.25 am		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
09.25 am - 09.40 am	**182**	A Methodological Approach for the Quality Assurance of Virtual Platforms Delivering Short-Term Online IT Courses. *Buddhi.A.Munasinghe, MPAW.Gamage, PPG.Dinesh Asanka*
09.40 am - 09.55 am	**35**	Developing Coordinate Conversion Mobile Application for Geomatics Education *A Hussaini, L Huang and KKW Tang*
09.55 am – 10.10 am	**41**	Investigating the Learner Perception on Massive Open Online Courses (MOOCs): A Case Study from Sri Lanka *TA Gamage, ERC Sandamali, LP Kalansoriya*
10.10 am – 10.25 am	**139**	Twitter Sentiment Analysis and Topic Modeling for Online Learning *HWK Sajinika S Vasanthapriyan and PMAK Wijeratne*
10.25 am – 10.35 am		QA Session
10.35 am – 10.45 am		Summing up by the Chair

Day		**24th February 2023**
Venue		LT 103
Time		09.00 am – 10.05 am
Session		**Software Engineering**
Session Chair		Dr Dasuni Nawinna Assistant Professor Sri Lanka Institute of Information Technology
Panel Members		Mr Akalanka Galapathi Graduate student University of Alberta Canada
Rapporteur		Dr RAHM Rupasingha Senior Lecturer Sabaragamuwa University of Sri Lanka
Session Coordinator		Ms KT Dananjali Instructor Sabaragamuwa University of Sri Lanka
09.00 am – 09.05 am		Introduction of the Chair
09.05 am – 09.25 am		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
09.25 am - 09.40 am	**200**	Code Clone Detection Using Boosting Algorithms *MV Thanoshan, K Banujan, BTGS Kumara, S Prasanth, Zhenni Li and Incheon Paik*
09.45 am – 09.55 am		QA Session
09.55 am – 10.05 am		Summing up by the Chair

Day	24th February 2023
Venue	LT 202
Time	09.00 am – 10.45 am
Session	**Human-Computer Interaction and Computer Vision**
Session Chair	Dr Kasun Karunanayake Senior Lecturer University of Colombo School of Computing
Panel Members	Dr Thilina Halloluwa Senior Lecturer University of Colombo School of Computing Dr. Anusha Jayasiri Senior Lecturer University of the Visual and Performing Arts
Rapporteur	Ms UP Kudagamage Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
Session Coordinator	Ms PMAK Wijeratne Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
09.00 am – 09.05 am	Introduction of the Chair
09.05 am – 09.25 am	Plenary Speech by the Chair

Time	Paper ID	Paper Title and Authors
09.25 am - 09.40 am	**194**	A Comprehensive Review on Speech Synthesis using Neural-Network Based Approaches *NN Perera and GU Ganegoda*
09.40 am - 09.55 am	**100**	An Efficient Knock Code Decoding Approach to Assist the People with Communication Impairments *S Pabasara and T Kokul*
09.55 am – 10.10 am	**167**	Re-evaluating Keystroke Dynamics for Continuous Authentication *Dilshan Senarath, Sanuja Tharinda, Maduka Vishvajith, Sanka Rasnayaka, Sandareka Wickramanayake and Dulani Meedeniya*
10.10 am - 10.25 am	**191**	Virtual Reality Based Approaches for Post Ischemic Stroke Rehabilitation: Current Practices and Future Perspectives *BC Wickramasinghe, KAKT Karunanayaka, HKTC Halloluwa and AD Cheok*
10.25 am – 10.35 am		QA Session
10.35 am – 10.45 am		Summing up by the Chair

Day		**24th February 2023**
Venue		LT 203
Time		09.00 am – 11.15 am
Session		**Open**
Session Chair		Dr Pradeep Kalansooriya Senior Lecturer General Sir John Kotelawala Defence University
Panel Members		Dr Nuwan Kodagoda Senior Lecturer Sri Lanka Institute of Information Technology Dr Nalaka Lankasena Senior Lecturer University of Sri Jayewardenepura
Rapporteur		Ms R Nirubika Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
Session Coordinator		Mr S Prashanth Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
09.00 am – 09.05 am		Introduction of the Chair
09.05 am – 09.25 am		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
09.25 am – 09.40 am	**147**	Determining the Relationship between Organizational Characteristics and Digital Transformation Strategies – A Systematic Literature Review *HYA Kodithuwakku and R Wickramarachchi*
09.40 am - 09.55 am	**28**	Driving Innovative Culture with Emotional Intelligence *Azra Rizwi and Shashika Lokuliyana*
09.55 am - 10.10 am	**110**	Fine-Tuned CNN-Based Sri Lankan Currency Note Detection Method for the Visually Impaired People Using Smartphones *ASK Perera and GSN Meedin*
10.10 am - 10.25 am	**79**	Review of Social Media's Impact on Initial Coin Offerings *Sarangani Sivarajah and Supunmali Ahangama*
10.25 am - 10.40 am	**80**	Traffic Collision Avoidance with Vehicular Edge Computing *Ravishka Hasarinda, Theekshana Tharuminda, Kapila Palitharathna and Sampath Edirisinghe*
10.40 am - 10.55 am		QA Session
10.55 am – 11.05 am		Summing up by the Chair

Day		24th February 2023
Venue		LT 204
Time		09.00 am – 11.15 am
Session		**Industry R&D Track**
Session Chair		Ms Heshani Mahalaksha Electrical Engineer Ceylon Electricity Board
Panel Members		Dr Asanka Dharmawansa Senior Lecturer Wayamba University of Sri Lanka Ms Thotagamuwage Sajani Commercial Engineer Ceylon Electricity Board
Rapporteur		Dr Sugeeswari Lekamge Senior Lecturer Sabaragamuwa University of Sri Lanka
Session Coordinator		Ms KS Ranasinghe Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
09.00 am – 09.05 am		Introduction of the Chair
09.05 am – 09.25 am		Plenary Speech by the Chair
Time	Paper ID	**Paper Title and Authors**
09.40 am - 09.55 am	**205**	Application of the Shapley Value on Energy and Power Allocation in a Deficit Power Environment *K Sathish Kumar, G Gokulakrishnan*
09.55 am - 10.10 am	**93**	Developing a Predictive Model to Forecast Optimal Production Quantity Under Uncertainty:A Systematic Literature Review *WDAP. Gunasekara, K Chathurangi, A Wijayanayake*
10.10 am - 10.25 am	**90**	Key Technologies And Critical Success Factors Of Industry 4.0 For The Sri Lankan Apparel Manufacturing Sector: A Systematic Literature Review *AS Withanaarachchi, AMH Silva*
10.25 am - 10.40 am	**77**	Risk Analysis on Green Supply Chain Management: A Systematic Literature Review *GAPAA Jayasinghe, APKJ Prabodhika, AN Wijayanayake*
10.40 am – 10.55 am	**76**	TQM and Green Supply Chain Management Practices on Supply Chain Performance of Third-Party Logistics Services in Sri Lanka: A Systematic Review of Literature *KR Nawurunnage, APKJ Prasadika, AN.Wijayanayake*
10.55 am – 11.05 am		QA Session
11.05 am – 11.15 am		Summing up by the Chair

Day		24th February 2023
Venue		LT 102
Time		01.00 pm – 03.45 pm
Session		**Artificial Intelligence and Machine Learning – II**
Session Chair		Dr. Lochandaka Ranatunga Senior Lecturer University of Moratuwa
Panel Members		Dr Menaka Ranasinghe Senior Lecturer The Open University of Sri Lanka Dr Siyamalan Manivannan Professor University of Jaffna
Rapporteur		Prof BTGS Kumara Professor Sabaragamuwa University of Sri Lanka
Session Coordinator		Ms KT Dananjali Instructor Sabaragamuwa University of Sri Lanka
01.00 pm – 01.05 pm		Introduction of the Chair
01.05 pm – 01.25 pm		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
01.25 pm - 01.40 pm	**154**	Identification of Covid-19 Using Speech Recognition and Convolutional Neural Networks *Tharanga Ranaweera and Kasun Karunanayaka*
01.40 pm - 01.55 pm	**19**	Identifying Unusual Human Movements Using Multi-Agent and Time-Series Outlier Detection Techniques *PPG. Dinesh Asanka, Chathura Rajapakshe and Masakazu Takahashi*
01.55 pm - 02.10 pm	**65**	Machine Learning Approach for Discovering Successful Books Based on the Achievement of Award-Winning *SMST Wijekoon and RAHM Rupasingha*
02.10 pm - 02.25 pm	**70**	Melanoma Skin Cancer Classification with Explainability *L Gamage, U Isuranga, SD Silva and D Meedeniya*
02.25 pm - 02.40 pm	**197**	Ontology Based Restaurant Recommendation Approach *HMRL Bandara and L Ranathunga*
02.40 pm - 02.55 pm	**37**	Path Planning for Moving Robots in an Unknown Dynamic Area Using RND-Based Deep Reinforcement Learning *J Bodaragama and UUS Rajapaksha*
02.55 pm – 03.10 pm	**188**	Red Onion Price Factors Correlation Identification and Price Prediction Using Multiple Machine Learning Models for Jaffna District Sri Lanka *S Mithuna, JKDBG Jayaneththi and T Sajarupan*
03.10 pm – 03.25 pm	**131**	Sentiment Analysis of Twitter Data on the Tourism Industry during the Covid-19 Pandemic *GAN Priyamal and RAHM Rupasingha*
03.25 pm – 03.35 pm		QA Session
03.35 pm – 03.45 pm		Summing up by the Chair

Day	24th February 2023
Venue	LT 103
Time	01.00 pm – 03.00 pm
Session	**Computer Vision and Image Processing**
Session Chair	Prof Amirthalingam Ramanan Professor University of Jaffna
Panel Members	Prof Roshan Ragel Professor University of Peradeniya Dr Nagulan Ratnarajah Senior Lecturer University of Vavuniya
Rapporteur	Ms PMAK Wijeratne Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
Session Coordinator	Mr S Nimishan Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
01.00 pm – 01.05 pm	Introduction of the Chair
01.05 pm – 01.25 pm	Plenary Speech by the Chair

Time	Paper ID	Paper Title and Authors
01.25 pm - 01.40 pm	**164**	Article Elements Recognition of Old Sinhala Newspapers Using Vision Heuristic Algorithm *GD Shashiwadana Nirmani and Lochandaka Ranathunga*
01.40 pm - 01.55 pm	**119**	Automated Radiology Report Generation Using Transformers *Wimukthi Nimalsiri, Mahela Hennayake, Kasun Rathnayake, Thanuja D Ambegoda and Dulani Meedeniya*
01.55 pm - 02.10 pm	**196**	Damaged Sinhala Handwritten Character Location-Identification Using Neighbour Mapping *Viraj Lakshitha, Iresha Madhuwanthi and Lochandaka Ranathunga*
02.10 pm – 02.25 pm	**199**	Plant Leaf Recognition Using Texture, Colour and Vein Density Features *SW Athapaththu and UAP Ishanka*
02.25 pm – 02.40 pm	**195**	Reconstruct Damaged Sinhala Handwritten Characters by Guided Edge Linking Approach *Iresha Madhuwanthi and Lochandaka Ranathunga*
02.40 pm – 02.50 pm		QA Session
02.50 pm – 03.00 pm		Summing up by the Chair

Day		24th February 2023
Venue		LT 204
Time		01.00 pm – 02.35 pm
Session		**Internet of Things and Applications**
Session Chair		Dr Tharinda Vidanagama Senior lecturer Wayamba University of Sri Lanka
Panel Members		Dr Vidura Jayasooriya Senior Lecturer University of Sri Jayewardenepura Dr Anuradha Jayakody Assistant Professor Sri Lanka Institute of Information Technology
Rapporteur		Mr P Vigneshwaran Lecturer(Probationary) Sabaragamuwa University of Sri Lanka
Session Coordinator		Mrs JDU Indumini Instructor Sabaragamuwa University of Sri Lanka
01.00 pm – 01.05 pm		Introduction of the Chair
01.05 pm – 01.25 pm		Plenary Speech by the Chair
Time	**Paper ID**	**Paper Title and Authors**
01.25 pm – 01.40 pm	**14**	Real-time Vehicular Pollution Detection Model using IoT and Distributed Streaming Techniques *ST Rakkesh, AR Weerasinghe, and RAC Ranasinghe*
01.40 pm – 01.55 pm	**62**	Smart Waste Segregation for Home Environment Muhammed Rijah, and Pradeep KW Abeygunawardhana
01.55 pm – 02.10 pm	**134**	Two-Factor Commissioning for Thread Protocol Gopinath Sittampalam, Suneth Namal, and Roshan Ragel
02.10 pm – 02.25 pm		QA Session
02.25 pm – 02.35 pm		Summing up by the Chair

TECHNICAL CO-SPONSORS

Recognition From

FINANCIAL SPONSORS

Organized by

PROGRAMME BOOK