2025 5th International Conference on Advanced Research in **Computing (ICARC 2025)**

Belihuloya, Sri Lanka 19-20 February 2025

Pages 1-462



IEEE Catalog Number: CFP25BM0-POD ISBN:

979-8-3315-3099-0

Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc. **All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number: CFP25BM0-POD ISBN (Print-On-Demand): 979-8-3315-3099-0 979-8-3315-3098-3 ISBN (Online):

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633 E-mail: curran@proceedings.com

Web: www.proceedings.com



Table of Content

Organizing Committee	ii
Technical Program Committee	iv
Advisory Panel	vi
Panel of Reviewers	vii
Editorial Board	xii
Messages	xiii
Keynote Addresses	xx
Conference Programme	xxi
Table of Contents	xxxi
Artificial Intelligence and Machine Learning Track	
Machine Learning Based Enhanced Remote Power Analysis Attacks	1
I. Kasthuripitiya, J. Ariyawansha, T. Ranasinghe, M. Sandirigama and D. Jayasinghe	
Evaluation of Machine Learning Models in Student Academic Performance Prediction	7
A.G.R. Sandeepa, S.D. Mohottala	
Classification of Alzheimer's Disease Stages using Weighted Brain Connectivity based Graph Convolutional Neural Network	13
S.Janany, K.Logiraj, J.Tuvensha, S.Subaramya, T.Kokul, and R.Nagulan	
Arthropodia-V1: Biodiversity Dataset for Semantic Segmentation, Quality Estimation, and Observation Extraction	19
Mohamed Ayoob, Tomas Maul and Tissa Chandesa	
Real-Time Recognition and Translation of Sinhala Sign Language	25
T.M.Lakmini Anuruddhika S. Thennakoon, Daham C. Kahawearachchi and R. Panchendrarajan	
SSL400 - A Comprehensive Word Level Dataset for Sinhala Sign Language Recognition	31
Yohan Abhishek, T.G.D.K. Sumanathilaka	
Enhanced Anomaly Detection in Aerial Imagery using Text to Image Generation	37
Nethmi Muthugala, Yunpeng Li	
A Robust Vision-Based Dynamic Sign Language Recognition Using a Hybrid CNN-LSTM Model	43
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	
Machine Learning Approach to Modeling Rainfall and River Overflow Trends in Nilwala River Basin, Sri Lanka	49
K.V.N.S. Perera, D.D.A. Arthanayake, M.W.P.Maduranga	
A Statistical Feature Extraction Approach Using Bird Flight Calls	55
K.M.L.K. Mahanayake and S.P Abeysundara	
Improved Grading Recurrent Unit Model for Urban Traffic Flow Prediction	61
K.L.Y.S. Karandana, D.D.A. Arthanayake and M.W.P. Maduranga	
Comparative Study Between Traditional SARIMA Model And Machine Learning Algorithms To	67

Forecast Monthly Coconut Production In Sri Lanka	
A.P.A Fernando, J.B. DonPaul and D.D.A. Arthanayake	
Evaluating HLS4ML For Converting a CNN Model into High Level Synthesis	72
Noura Jariri, Mohammed Chaman, Rania Majdoubi, and Abdelkader Hadjoudja	
Multitasking Neural Network for Cricket Team Selection with Complex Dynamics	78
W.M.H.G.T.C.K. Weerakoon, H.K.T.C. Halloluwa	
A Review on AI-Driven Prediction and Visualization of Kinase Inhibitor Binding Landscapes	84
M.A.S.D. Jayasundara, R.D. Nawarathna	
A Comprehensive Ensemble-Based Approach for Heart Disease Prediction with Feature Selection and Model Analysis	90
Mst. Sazia Tahosin, Ismail Hossain Pranto, Mohamamd Muid Uddin Chowdhury, Sonet Barua Emon, Md Ashraful Alam and Chonchal Khan	
Indian Sign Language Alphanumeric Hand Gestures Recognition Using Deep Learning Techniques	96
M. Shakana and M. Ramya	
ACStyleGAN for Skin Lesion Image Generation	101
Dilmi Abeytunga and Oshada Senaweera	
Underwater Image Enhancement Using Depth Estimation and a Transformer-GAN Model	106
S. Pushpanayagam, T. Kokul, A. Ramanan, and U.A.J. Pinidiyaarachchi	
Predictive Modeling for Identifying Early Warning Signs of Underperformance in Vocational Education	112
D. S. S. Hettiarachchi, S. M. B. Harshanath	
Color and Grayscale Pencil Image Translation into Realistic Images Using Generative Adversarial Networks.	118
R.K.B. Yeshani, Charith Chiththranjan	
A Multi-Model Automated Framework for Scalable and Robust Outlier Detection in Data Warehousing	124
W.W.A.D.R. Fernando, and P.P.G.D. Asanka	
Machine Learning Approach to Identify the Incidence of Human Deaths Due to Human-Elephant Conflicts	130
W. A. D. M. Lakshitha, N.V. Chandrasekara, D.M.P.V. Dissanayaka and H.W.B. Kavinga	
Developing Predictive Models for Future Stress Likelihood and Recovery Time Using Behavioral and Emotional Data.	136
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	
Deep Learning Based Export Oriented Guppy Fish Health Classification Method	142
K. I. C. Gunathilaka, R. A. P. Buddhika	
Vibration-Based Failure Prediction in Machinery: Novel Application of Time Series Decomposition and Neural Networks	147
W.C. Nirmal, H.K.I.S.Lakmal and K.J.P.Fernando	
Enhanced Approaches to Kingfisher Specie Identification Using Machine Learning and Deep Learning	153
C.S. Vidanagamachchi, W.G. D Chathuranga, L.L.G. Chathuranga, K.T.A.S. Jayathilake, R.B. Yeshani and S.M. Vidanagamachchi	
Deep Learning-Based Road Sign Detection & Recognition System for Autonomous Vehicles	159
P.G.B.A.H. Jayarathne and R.A.Prabhath Buddhika	
Enhancing Human Emotion Detection in Audio Data with Deep Neural Networks Using Cross-Dataset	165
Sandushi Weraduwa, Minuli Kanangara, Shiran SuriyaPathiraja and Thilini V. Mahanama	

Infrared-Augmented CycleGAN (IRACycle GAN) for Unpaired Night-to-Day Image Translation	171
K.J.P.Fernando, H.K.I.S.Lakmal and W.C.Nirmal	
Ayurvedic Plant Identification through Deep Learning Approaches A Case Study In Sri Lanka	177
M.Thanujan, J.Yukatharsana, W.A.Sanjeewa and M.Janotheepan	
Text Analytics and Natural Language Processing Track	
Aspect-Based Sentiment Analysis of Student Reviews on MOOC Platforms	183
A.D.M.B.B. Dissanayake, W.P.A. Fernando	
Child's Age Range Prediction Using Sinhala Speech Recognition System.	189
A.D Kathriarachchi and K. Pulasinghe	
A Comprehensive Review of Bias Detection and XAI Techniques in NLP	195
Loganathan Bhavaneetharan	
Deep Learning based Song Recommendation System for Emotions of the Listener	201
L. A. T. Perera, M. Mervyn, A. Welhenge and A.Taparugssanagorn	
Systematic Review of Fine-tuning Approaches for Large Language Models in the Context of Sinhala	207
Sachin Hansaka, Deshan Sumanathilaka	
Recent Trends and Challenges in Assistive Applications for Sinhala-Speaking Adults with Dyslexia: A Decade in Review	213
P.S. Perera, D. Sumanathilaka	
A Review on Leveraging Language Agnostic Automated Text Data Augmentation with Explainable Semantic Integrity	219
W.A.S.M. Wijesundera and S.M. Peiris	
Identification and Transliteration of Braille Letters into Sinhala Text	225
D.R.C.G.K.Dampalessa and R.G.Ragel	
Ensemble Approach for Religious Hate Speech Detection in Text-Based Images on Facebook	231
Dilushri Pavithra and Roy Smith	
Performance Analysis of Text Classification Algorithms for Dhivehi Language Documents	237
Fathimath Rashma Mohamed, Prasanna S. Haddela	
A Hybrid Computational Framework Using NLP and ML for Emotion Analysis in Sinhala Songs	243
Malinda Peiris and Deshan Sumanathilaka	
Intelligent Document Clustering for Sinhala Text: Combining LLM-based NER with Fuzzy Clustering Techniques	249
R.M.P.P. Rathnayake and P.P.G.D Asanka	
Generative AI based mobile application for vehicle breakdown and maintenance assistance	255
Amindu Weerawardhana and Pradeep Pallegama	
Enhancing Resume Analysis: Leveraging Natural Language Processing And Machine Learning for Automated Resume Screening Using KSA Parameters.	261
B.A.T Dilshan, P.P.G.D Asanka	
Identification of the severity level of a hate text by YouTubers	267
S. Perera, A. Varatharaj, I. Perera and S. Ahangama	
Robotic Process Automation Activity Recommendation using NLP Techniques	273
H. M. T. S. Herath	
Enhancing Mobile Wallet Usability through Developer Guidelines: Addressing Challenges in the Sri Lankan Market	279

V.D.V. Samaradiwakara, S. Jayalal and A.S. Withanaarachchi	
Enhancing AI Classification Performance: A Framework for Textual Data Quality Assessment	285
B.S.M.N. Bibulewela , Dilani Wickramaarachchi and P. P. G. Dinesh Asanka	
Influence Ranking of Hate Users in Content Propagation on Twitter	291
S. Perera, I. Perera and S. Ahangama	
Computer Networks and Internet of Things Track	
Feasibility of Solar-Powered LoRaWAN Sensor Nodes in Tropical Countries	297
Niroshan Herath, Sampath Edirisinghe, Akila Wijethunge, Nishan Dharmaweera, Uditha Wijewardhana	
Hybrid Machine Learning Approach for Enhanced Vulnerability Detection in Cloud Environments Using NIST and MITRE Frameworks	303
NW Chanaka Lasantha, MWP Maduranga, Ruvan Abeysekara, Valmik Tilwari, Nilotpal Chakraborty, Debashree Sharma	
Enhanced Difference Expansion for Secure Secret Sharing and Message Embedding in Digital Images	309
Dimas Wahono, Nazhifah Elqolby	
PairStruct: A Steganographic Algorithm Based on Image Structure and Pair-Pixels Difference Expansion	314
Alfarabi Muzli, Adifa Widyadhani Chanda D'Layla, Ntivuguruzwa Jean De La Croix, Tohari Ahmad	
A Multi-Model Framework for Synthesizing High-Fidelity Network Intrusion Data Using Generative AI	320
R. Mathushaharan, S. Gayan, S. Edirisinghe, and H. Inaltekin	
Cactus Graph Structure to Model Broadband Network Connectivity of Remote Communities	326
U. S. Premarathne	
FlexiSecure - AI-Powered Fraud Detection with Real-Time Alerts and Customizable Security.	332
N. Mumthas	
An Application to Integrate Remote Vital Signs in a Real-Time Video Telehealth Call	338
L. Sutton, A. Welhenge and N. Fernando	
Bovitrack: Animal behavior monitoring using Machine learning and IoT.	344
Harsha Viraj, Sumuduni Wijesekara , Kuluni Tharuka, Shenika Fernando, Anuradha Jayakody and Pipuni Wijesiri	
SafeHome: Automation and Security System using Internet of Things with Mobile Application	350
Patricia A. Abas, Bryll Christopher O. Reyes, Jazzy Serquiña, Juliet O. Niega, Oliver A. Medina	
Multispectral Images and IoT Based Tea Plantation Monitoring: A Proposed System Architecture	356
K.P.W.D.V. Kariyawasam, P.N. Kahandagamage, M.R.R. Fernando, J.M. Fernandopulle, Vishan Jayasinghearachchi and Kapila Dissanayaka	
RiderRescue: Motorcycle Crash Detection for Emergency Response Using Support Vector Machine Algorithm in MATLAB	362
Jose Elmar S. Acuno, Klenz Andrei G. Andaya, Clarence Glenford A. Bueza, Krystal S. Roa, Juliet O. Niega, Mark Angelo T. Mercado	
Real-Time Alum Dosage Optimization Using IoT-Enabled Water Quality Sensing Device	368
HHC Gunathilaka, HT Kodikara, GRMNND Ranaweera, DWNT Wijethunga, Charithri Yapa, Bhathiya Pilanawithana, Nishan Dharmaweera	
Scalable Convolutional Neural Network Inference on-the-Edge using Low-Density FPGAs	374
S. A. U. R. Suraweera Arachchi, W. A. S. Wijesinghe	
Pairing-Free Certificateless Data Auditing for Fog assisted Cyber Physical Systems	380

Junaid Alam, S. Maity, and S. Venkatesan

Customizable DDoS Attack Data Generation in SDN Environments for Enhanced Machine Learning Detection Models	386
P.N Gayantha, C. Rajapakse and J. Senanayake	
Towards Sustainable Radio Access Networks: Enabling Technologies and Open Challenges	392
Karunaharan Vithusan, Samiru Gayan and Sampath Edirisinghe	
Cybersecurity for Cloud-Based IoT Devices: Views from IT Professionals	398
A.W. S. Aamina, K.S. Lasith Gunawardena and Nalin Arachchilage	
Knowledge Management and Software Engineering Track	
Impact of Artificial Intelligence on Decision- Making in Information Systems	403
RWMR Dharani Rajasinghe	
Factors that Affect the Adoption of the Hybrid Project Management Approach: A Systematic Literature Review	409
A.A.K.G. Amarasinghe and R. Wickramarachchi	
How E-commerce Succeeds: The Role of Information Systems in Boosting Customer Satisfaction	415
G.P.S.L. Pathirana, S.J. Pathirana, G.S.B. Boyagoda, S.M. Thalagala, Dr.K. Wisenthige and C. Aluthwala	
The Impact of Social Media Exposure on Consumer Banking Decisions in Sri Lanka	421
R.M.M.L. Samarasinghe1 and A.S. Withanaarachchi	
Factors Affecting the Adoption of Agile Scaling Practices in Distributed Software Development Teams	427
H.P.S. Gandhira and R. Wickramarachchi	
A Secure Protocol for Computer-Based Assessments in Disrupted Environments	433
Danishka Navin, Kasun De Zoysa, D. D. Karunaratna, S. M. Buddhika Harshanath	
Toward a Greener Web: A Systematic Literature Review of Sustainable Practices in Web Development	439
R.A.W.L. Wimalasena and Nimasha Arambepola	
Developing an AI Readiness Model for Software Project Management: A Thematic Analysis	445
R.B.M.T. Bandara and Ruwan Wickramarachchi	
$\label{lem:condition} \textbf{Analyzing the impact of prompt engineering on efficiency, code quality, and security in CRUD application development}$	451
K.A.A Shanuka Janaka Wijayanayake and Kaneeka Vidanage	
DevSecOps Implementation for Continuous Security in Financial Trading Software Application Development	457
S.D.L.V. Dasanayake, Janaka Senanayake, W.M. J. I. Wijayanayake	
Driving Innovation through Knowledge Management: Insights for IS Strategies	463
Harini Jayasundara, Naveen Jayathilake and Ruwan Wickramarachchi	
Enhancing Software Quality Assurance Through Automated Defect Triage	469
Y.N Binduhewa, P.P.G Dinesh Asanka	
Evaluating the Effectiveness of Large Language Models in Automated Unit Test Generation	475
T. Godage, S. Nimishan, S. Vasanthapriyan , P. Vigneshwaranan , C. Joseph, and S. Thuseethan	
The Role of IS/IT Strategies in Driving Business Transformation and Achieving Organizational Objectives: A Systematic Literature Review	481
G.W.S. Hasarinda, G.W. Wikramakalutota, R. Wickramarachchi	
Assessing the Limits of Automated Accessibility Testing: Insights for QA Engineers and Tool Developers	487
D.T.H. Kodithuwakku, D.Wicramaarachchi	
Critical Factors Influencing the Maturity of Rusiness Analytics of Software and Annarel Industries in Sri	493

Lanka	
T.N. De Silva, J. Wijayanayake and S. Jayasinghe	
Barriers and Strategy Analysis for the Usage of Social Media by small and medium-scale enterprises: A Systematic Review	499
D.D.K.Karawgoda and C.A.Kavirathna	
The Role of AI in Software Test Automation	503
R.M.S. Ranapana, W.M. J. I. Wijayanayake	
Evaluating AI-Based Unit Testing Tools: A Focus on Usability, Reliability, and Integration	51
Hafsa Aarifeen, and Dilani Wickramaarachchi	
Implementation of Knowledge Management Practices in Sri Lankan Apparel Sector	51
M. P Sathsarani Silva and Yehemini Jayatissa	
Generative AI Enhanced Teaching and Learning Track	
Transforming Music: A Review of Artificial Intelligence in Jazz Reharmonization	523
S. Jayasinghe and K. Bhareti	
Advancements in Generative AI and its Applications	529
P M L Liyanage, N K Ranasinghe and L V Kruglova	
Transformative Impact of Predictive and Generative AI on Education Workforce in Developing Countries	533
M Weligodapola, C U Kumarapperuma	
Revolutionizing Education: Generative AI as a Catalyst for Personalized Learning and Innovative Teaching Practices	54
I.G.U.D Jayaweera	
Enhancing Automated Grading with Capabilities of LLMs: Using Prompt Engineering and RAG Techniques	54
Thisuri Abeywardana, Nethmini Nandadewa, Vimansa Wickramasinghe, Sudam Rohanadheera, Thilini Nadungodage and Priyantha Hewagamage	
An Approach to Detect Large Language Model Generated Firmware for Arduino Platform	553
Rajani Gunawardhana and Thareendhra Keerthi Wijayasiriwardhane	
Leveraging AI to Ensure Authenticity in Student Assignments: A Knowledge-Based Validation and Evaluation Framework	559
D.C.L. Hondarangala, D.Wickramaarachchi	
A BI Approach for Student Engagement and Retention along with Cognitive Load Analysis for Educator	565
M.N. Algewatta and K. Manathunga	
Scoring System for Academic Essay Questions with Personalised Feedback Generation	57
A.S.D.S. Kumara, D. Asanka	
Role of GenAI in Student Knowledge Enhancement: Learners Perception	57
M.S. Faathima Fayaza, Thiviyan Senthilrajah,Upeka Wijesinghe and Supunmali Ahangama	
Enhancing Systematic Literature Reviews: Evaluating the Performance of LLM-Based Tools Across Key Systematic Literature Review Stages	583
L.N.P Silva, D. Wickramaarachchi	
Development of a Chat Assistant Using Large Language Models for Personalized Mathematics Tutoring to Overcome Educational Disparities in Sri Lanka	589

Minuli Kannangara, Chathura Rajapakse, Dinesh Asanka and Nirasha Jayalath

Digital Transformation and Industry 5.0 Track

Interbank Liability Analyzing Tool To Manage Short-Term Liquidity Among Banks And Facilitate Liability Limits For Daily Operations	595
H.P.S.W. Kumara, K.M. Bamunawita and H.R.L.H. Jayasekara	
3D - AI Avatar Attributes Impacting on Bank Customers' Perceived Experience	601
Imesha Imangi, Supun Lakshan, Surasi Muthumini De Silva, H.A.Dimuthu Maduranga Arachchi, and G.D. Samarasinghe	
Bibliometric Analysis of Sustainable Digital Technologies for Reducing Waste in the Food Supply Chain.	607
Kavith Balachandra, Niles Perera	
Empirical Evaluation of Deep Learning Models for Long-Term Solar Power Generation Forecasting	613
P.D.C.G. Karunathilaka and S. Wickramanayake	
Application of Six Sigma Methodology in the Service Industry to Improve Process Efficiency and Customer Satisfaction: Systematic Review	619
S.M.T. Samarakoon and C.A. Kavirathna	
Industry 5.0 Readiness in the Sri Lankan Apparel Industry: A Systematic Literature Review	625
Hiruni Keenavinna, Ruwan Wickramarachchi	
The Novel DeepBoost Multi Output Regressor for Household Finance Intelligence	631
S. H. S. V. Suwandaratna, G. O. Priyankara	
Impact of Cloud-Based Enterprise Systems on Enhancing Business Model Performance in Retail SMEs	637
H.A.D.J.M. Bandara and C.R. Oruthotaarachchi	
IoT Based Smart Waste Bins for Smart Waste Management in Sri Lanka.	643
H.P.B.D. Hemapriya, D.S. Hewaranaweera, N.T.M. Sajith, A.M.A. Saja and M.N.M. Aashiq	
Feature Selection in Machine Learning for Wetland Water Level Prediction	649
Lakpriya Weragoda, Dhushintha Ramalingam, Upaka Rathnayake and Damayanthi Herath	
Analyzing the Readiness for Digital Twin Implementation in the Apparel Industry: A Systematic Review	655
Dunston Anthonypillailionel, Chalani Ruchira Oruththotaarachi	
A Computer Vision Approach for Estimating Embodied Carbon to Support Circular Economy Decisions	661
D. Rajaratnam, R. A. Stewart, T. Liu, A. S. Vieira, I. Amarasinghe	
Impact of Industry 4.0 related Drivers on the Performance of the Logistic Sector: A Study of Sri Lankan Context	667
Dinithi Samarathunga, Amila Withanaarachchi	
Exploring the Impact of Government Service Website Usability on End-User Satisfaction: A Study of Sri Lankan E-Government Websites in the Education Sector	673
R Adshayan and Y Jayatissa	
Factors Affecting User Experience of Telemedicine: COVID-19 Experience of Healthcare Practitioners in Sri Lanka	679
G.W.S. Hasarinda, Y. Jayatissa and P.P.G.D. Asanka	
IntelliCross:Adaptive Pedestrian Crossing System	685
Udayanga Dissanayake, Dinusha Weerasekara, Hansika Sumanasekara, Dodamgoda Ishara, Pipuni Wijesiri and Menaka Moonamaldeniya	
Enhancing Predictive Maintenance in Industry 4.0: Leveraging AI for Optimal Machinery Health Management	691
U.P. Lahiru, C. Rajapakse, Thilini Mahanama, Dinesh Asanka	
An IoT-Enabled Condition Monitoring Device: Integrating Vibration Analysis and Environmental	697

Sensing	
M. R. Liyanage, A.W.B.I. Annasiwaththa	
Efficiency Evaluations in 3PL Warehouse Operations: Building Research Themes Through Systematic Literature Review.	703
R. de Abrew, C. Kavirathna, A. Wijayanayake and K. Abhilashani	
Towards Sustainable Software Testing Practices in IT Firms	709
W.P.P.M. Pathirana, and Yehemini Jayatissa	
Digital Transformation in Healthcare Track	
Predictive Modeling of Cardiovascular Disease Using Machine Learning: A Comparative Analysis	71:
Sadia Islam Tonni, Md Ashraful Alam, Amir Sohel, Chonchal Khan, Md.Khaledur Rahman Onik and Ismail Hossain Pranto	
Comparative Analysis of Overall Survival Prediction for Glioblastoma Patients: Neural Networks vs. Random Forests with Data Augmentation	72
H.M.L.S. Kumari and C.K. Walgampaya	
FracturePro: Automated Bone Fracture Identification and Classification Using an Ensemble Deep Learning Approach	72
B.K.M.S. Rodrigo and B. Athuraliya	
An Examination of Harmonizing Multi-Vendor Cardiac MRI Data for Vendor-Neutral Image Segmentation	733
Hamdaan Mohideen, Mohamed Ayoob,cOshan Nettasinghe, Vithushan Sylvester and Helmini Bowala	
Enhancing Chronic Kidney Disease Prediction: A Hybrid Approach Combining Logistic Regression and Random Forest Models	739
T.G. Jathunga and N.J. Abeygunwardena	
Development of a Multi-Dimensional Image Processing Model for Personalized Diagnosis and Severity Assessment of Skin Diseases	74:
Wijerama NS, Asanka PPG and Mahanama TV	
The Application of Machine and Deep Learning Models for Detecting Malware Threats in Healthcare Organizations	75
A. Zhumabekova, O. Ussatova, V. Karyukin, E.T. Matson, N. Ussatov, K. Zhumabekova, and Y. Begimbayeva	
A Comparative Study on Generalized Automated Medical Image Segmentation for Dataset Building	75
N. Kasineshan, V. Subramanieam, T. Yogeswaran, S.N. Liyanage, G.A.I. Devindi, R.G. Ragel, V. Thambawita and I. Nawinne	
Cardiac MRI Segmentation of Ventricular Structures and Myocardium Using U-Net Variants	763
C.B. Wijesinghe, D. Meedeniya and P. Yogarajah	
Boosting EEG-Based Emotion Recognition with Kolmogorov-Arnold Networks	769
S. Nimishan, S. Thuseethan, S. Vasanthapriyan and R.G. Ragel	
Interpretation of Chest X-rays using Deep Learning Techniques for Early Diagnosis of Tuberculosis.	775
S Prathyunman, S P Kasthuri Arachchi	
Functional Biomarkers of Alzheimer's Disease: Explainable AI using Resting-State fMRI	78
S.Pavithira, K.Logiraj, J.Tuvensha, S.Subaramya, T.Kokul, and R.Nagulan	
Large Language Model (LLM) Support for Preliminary Consultation in Healthcare.	78
Abishan Fernando, Dilani Wickramaarachchi	
Engagement of Sri Lankan Medical Practitioners with AI and Mental Health Decision Support AI Chatbot	793

A.M.Tharindu Sachintha Adhikari Janaka Wijayanayake and. Kaneeka Vidanage

Engineering Consistency of Large Language Models in Medical Education Through Prompt	/95
U. G. T. L. Weerathunge, S. Jayalal and T. K. Wijayasiriwardhane	
Model Optimization for Personalized Health Metrics Analysis	805
Perera K.K.M. Wijesiriwardena A, Pathirana A.P.S, Lakshan G.N, Pipuni Wijesiri, Anuradha Jayakody	
Deep Learning Model for Diabetic Retinopathy Detection Using MobileNet Architecture	811
G. Vijayakanthan, R. Vaishali and L.J.M.D.N.K. Jayasundara	
Open Track	
A New Era of Productive Learning Focused on the Retention of Attention Span: VerbaSure	817
S. Premnath, K. Ekanayake, T. Pieris, E. Hettiarachchi and K.P. Hewagamage	
Uniting Digital Disciplines: Bridging Literacy, Ethics, and Security Among University Students	823
Hansi Munasinghe, Kaushalya Hewawasam	
Channel Adaptive Decoding in Underwater Optical Camera Communication Systems	829
Thimuthu Aberathna, Miyuni Kumarage and Nuwan Atthanayake	
WaveCryptor: A Secure Hybrid Framework Combining Encryption and Steganography via Frequency Mapping	835
WDSS Pemasinghe	
The Influence of Generative AI on work-life balance among female software professionals in Sri Lanka	841
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	
BAHAGAP: Design and Development of an Image Processing-Based Detection and Monitoring System for Early Flood Warnings in High-Risk Zones	847
Juliet Niega, Jan Ricky Almazan, Racell Saludes, Jeru Pohl Avanzado ,Jan Cloyd Naval ,Nuel Jayson Alcantara	
Design And Development Of RWMS: A Residential Wastewater Management System with Filtration and Water Quality Monitoring	853
S.J.A. Author, J.P.B. Author, P.R.C. Author, S.L Author, J.O.N. Author and M.T.M. Author	
A Conceptual Design Framework for an Enhanced Hearing Aid Application Using Selective Sound Amplification	859
D.S. Gamage, A.M.A.D Bandara and T.A. Weerasinghe	
Image Processing and CNN based Anxiety, Depression, and Hypertension Identification through Iridology: A Systematic Review	865
KPI Nethtra and DVDS Abeysinghe	
The Factors Influencing Green IT Adoption in IT organizations in SriLanka	871
Thennila Mathimaaran, Yehemini Jayatissa	
Very Short-Term Surplus Energy Forecasting for Peer-to-Peer Energy Trading in Microgrids	877
T. Sajarupan, M.P.P. Liyanage, A.H Wijethunga, J. B. Ekanayake and B.W.H.A. Rupasinghe	
Enhancing Student Engagement in Sri Lankan Higher Education Through IoT: UTAUT Model	883
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	
Impact of Moodle's Usability on Student Satisfaction in Sri Lankan Universities	889
Ahamed Zaljey, Yehemini Jayatissa	
Unveiling Candidates' Traits and KSA Mapping Through Video Analysis in Interviews	895
P.H.C.D.S. Abeygunawardhana, D. Asanka	
Agent-Resed Modeling of Human-Flanbant Conflict Dynamics: A Simulation Approach Using Natl age	901

2025 5th International Conference on Advanced Research in Computing (ICARC)

W.W.A.D.R Fernando, R.A.C.P. Rajapakse, U.P Lahiru, D.M.T.W. Ariyarathne, N.S WIjerama B.A.T Dilshan	
An Agent-Based Model to Address the Gap in Internship Opportunities for IT Undergraduates in Sri Lanka	90′
Sandushi Weraduwa, Nadeera Gayantha, Kavindu Piyumantha, Minuli Kannangara and Chathura Rajapaksa	
A Game Centric E-Learning Application for Preschoolers	913
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	
Evaluating Blockchain Integration for Enhanced Security and Transparency in ERP Systems: A Systematic Review Across Manufacturing, Healthcare, and Finance Domains	919
G.W. Wickramakalutota and C.R. Oruthotaarachchi	
Optical Observation for Body Angles of Cricket Players' Motion to Identify the Batting Shots	925
J.I. Randika, D.K.A. Induranga, G.D.K.V. Maduwantha, B.T.G.S. Kumara	