SICET 2025 - Technical Program Schedule

Day 2 - 10th September 2025

Session 1 - 9.00 a.m. - 10.30 a.m.

Track	AI and Data-Driven Engineering	Venue - E101
Session Chair	Dr. Randima Dinalankara	
Track Chair	Dr. Hansani Weeratunga	
Paper ID	**Title**	**Presnting Author**
22	Diabetic Retinopathy Screening Using Image Processing	Malshi Wijesekara
39	Drug Addiction Likelihood Prediction Using a Web-Based Platform: (RiskAssess)	Mohamed Shabri
50	Gap analysis of the implementation of Intelligent Process Automation in the industrial context in Sri Lanka – A Systematic Literature Review	Pathum Udukumburage
72	AI adoption in the research component of business processes: enhancing effectiveness in client acquisition for IT services organizations	A.R.A.A. Bahey
Track	**Sustainable Built Environment, Smart Cities and Natural Ecosystems**	**Venue - E102**
Session Chair	Prof. Bandunee Athapaththu	
Track Chair	Prof. Shiromi Karunaratne	
Paper ID	**Title**	**Presnting Author**
4	FreshSight: A colour-blind-friendly solution for assessing produce freshness, ensuring food safety, and reducing waste	Poorni Fernando
19	3D Electro-Geometric Approach and Advanced Lightning Protection Modeling for Anuradhapura's Sacred Sites	S.Nirojan
60	Piezoelectric Energy Harvesting in Interactive Environments: A Case Study Using a Playpen-Based Prototype	Jayasanka Bandara
81	Performance Verification of the Leachate Treatment Plant : A Dilution-Based Engineering Approach	Manuja M. Nallaperuma
93	Multifactorial Drivers of Chronic Kidney Disease of Unknown Etiology (CKDu): A Review of Cadmium Exposure, UVB Radiation, and the Potential Role of Vitamin D Toxicity	Renuka T.K. Ariyawansha
94	Evaluation of the Knowledge Base in Agriculture and Food to Reduce and Prevent Chronic Kidney Disease of Unknown Etiology (CKDu)	Renuka T.K. Ariyawansha
Track	**Mechatronics, Robotics, and Autonomous Systems**	**Venue - E103L**
Session Chair	Dr. Charita Darshana Makavita	
Track Chair	Prof. Migara Liyanage	
Paper ID	**Title**	**Presnting Author**
28	Improving Post-Harvest Rice Drying Efficiency through a Low-Cost Halogen Dryer Design for Rural Communities	Supun Sadeepa
29	A Reconfigurable Fire Detection Platform with Live Monitoring and Automated Actuation Based on Sensor Data Analytics	Amila Karunanayaka
30	Low Cost and Portable Battery Tester for Hybrid and Electric Vehicle	Chamika Dissanayake
38	Bottle Identification and Positioning System of PET Bottle Collecting Robot for Trashed Bottles on the Ground	K. H. Pasan Deesara
84	A Systematic Review on Edge Computing for Smart Agriculture: Practical Applications and their Future Directions	Dinuka Mudalige
166	High-Speed Path Tracking of a Small Mobile Robot Using PD and ADRC Controllers with Experimental Validation	Pasan Senerath
176	Design and Development of a bio-inspired Robotic Manipulator for adaptive grasping in fruit picking: Review Paper	W A Pramuditha Asintha Bandara
Track	**Circular Economy and Sustainable Production**	**Venue - E105**
Session Chair	Dr. Mahinsasa Rathnayake	
Track Chair	Dr. Nandika Miguntenna	
Paper ID	**Title**	**Presnting Author**
32	Effect of Fiber Length on the Mechanical and Physical Properties of Bauhinia Racemosa-Reinforced Polyester Composites	Mesthri Waduge Sajini Bhagya Piyarathna
48	Evaluation of the Suitability of Barley Grass and Sandalwood Reinforced PLA Composites for FDM 3D-Printing Applications	Chamil Abeykoon
66	Developing a Web-Based Augmented Reality Tool for Promoting Sustainable Fashion Consumption	Dileka Fernando
127	Development of Low-cost Slipper by using NR/EVA Blend with Recycling Materials for reducing Environment Pollution in Footwear Industry	K. G. Randika
130	Production of cost-effective recycled plastic interlock as a solution to plastic waste generated in Sri Lanka.	Yasath Naveendra Wickramarathna Gunasekara
161	Applying the Multifaceted Potential of Seaweed in Bioplastics to Advance Sustainable Development in Sri Lanka – A Review	Pabasara Siriwardena
162	Experimental Study to Investigate the Compression Responses of Concrete with Waste Tire Aggregates Under Varying Loading Conditions.	Fernando W.K.B.H.S
Track	**Industry Connect**	**Venue - E106**
Session Chair	Dr. Ranga Rodrigo	
Track Chair	Prof. Chulantha Kulasekere and Mr. Tilanka Wijesinghe	
Paper ID	**Title**	**Presnting Author**
3	Mechanical Properties of OPC-Fly Ash Blended Cement Mortar Samples Utilizing Fly Ash from Sri Lankan Power Plants	Nuwan Maduwantha
15	Smart Train-Elephant Collision Management System	P. P. Nimsara
35	Smart Irrigation System Using Arduino and LabVIEW for Real-Time Monitoring and Efficient Water Management	Siranjeevi Vinayagamoorthy
59	Karate Kata Scoring and Performance Evaluation Using Video Analysis and Deep Learning	H.L.S.S. Liyanage
63	Enhancing Patient Safety with the MedAlert SYstem (MASY): A Low Cost Timer for Medication Administration Alerts	Pavara Rodrego
69	Comparison of pile driving equations	Hewage Saman Thilakasiri
123	Impact of IoT on Personal Area Networks (PANs)	D.R.T.D.Thilakarathna

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Session 3 - 1.30 p.m. - 3.00 p.m.

Track	AI and Data-Driven Engineering	Venue - E101
Session Chair	Dr. Charithri Yapa	
Track Chair	Dr. Hansani Weeratunga	
Paper ID	**Title**	**Presnting Author**
78	Data Driven Patternmaking: Automated Generation of Stretch-Knit Patterns Using Regression and Fabric Stretch Properties	Lasni Balasooriya
101	BiLSTM-Attention Autoencoder based Intrusion Detection System for SWIPT-Enabled IoT Systems	Vishalya Sooriarachchi
105	Machine Learning-Based Identification and Behavioral Analysis of Student Learning Styles in Online Learning Environments Using FSLSM and Clustering Techniques	W. A. A. M. Wanniarachchi
107	Adaptive Meta-Learning with Reinforcement-Guided Task Weighting in an Enhanced Reptile Framework	V. Athiththan
111	A New machine learning approach for in-game behavior analysis of football players based on player statistics	Ron Clever
112	Enhancing Named Entity Recognition for Email Text using Domain-Specific Tags	Sadakshini Krishnathas

Track	ICT for Societal Development and Digital Inclusion	Venue - E102
Session Chair	Dr. Rasika Rajapaksha	
Track Chair	Dr. Bhagya Nathali Silva	
Paper ID	**Title**	**Presnting Author**
20	Enhancing Nitrogen Management in Sri Lankan Rice Cultivation Using UAV-Based Multispectral Imagery and Machine Learning	C.L.I.S. Fonseka
23	A Data-Driven Approach to Predicting Ischemic Heart Disease Risk in Monaragala: Integrating Lifestyle and Symptom Factors with Machine Learning	M.A.R.L. Meddepola
44	Digital Marketplace and Community Hub for the Tailoring Industry in Sri Lanka	Risini Amarathunga
54	Enhancing Web Accessibility for People with Impairments: A Tool to Guide Web Developers	R. A. D. P. Rajapaksha
102	Feature Analysis of Blood Spatter Patterns with Image Processing	Thepuli Khemaratne
122	Towards Safer Elderly Care: A Convolutional Neural Network Solution for Fall Detection	Rashmika Wayangi Kalupahana
125	Mobile applications usage and awareness among Sri Lankan small business owners	Vidana Pathirana Yashoda Kawindi

Track	Thermal & Fluid Engineering	Venue - E103L
Session Chair	Dr. Ruminda Wimalasiri	
Track Chair	Dr. Priyantha Bandara	
Paper ID	**Title**	**Presnting Author**
17	1D and 3D numerical analysis on Francis hydro turbine model to improve the performance for flexible operating range	Young-Do Choi
21	Investigation on a flue gas flow rate measuring method for draft regulation on boiler operation	Yoshua Dylan
55	A Numerical Investigation of the Potential of Dimpled Surface Configurations to Improve Aerodynamic and Aeroacoustic Performance of Airfoils	ILLEKUTTIGE NISAL NELAKA FERNANDO
65	A CFD-Driven Design of Experiments Study on the Effects of Valve Overlap Time and Intake Pressure on the Performance and Emissions of a Hydrogen Engine	Isuru Wickramaarachchi
85	Li-ion Battery Cooling using PCMs: A Comparative Study on the Cooling Performance of Different PCM Configurations	Sumudu Adikaram
120	Analysis of Thermal Performance of Shell and Tube Heat Exchangers: A Correlation and CFD Based Approach	Sudheera Ashen Perera Ushettige

Track	Next Generation Communications and Networking	Venue - E105
Session Chair	Prof. Ammar Muthana	
Track Chair	Dr. Lasantha Seneviratne	
Paper ID	**Title**	**Presnting Author**
47	Enhancing Military Communication Security Using Hybrid Cryptography and Steganography	Thayuri Wickramapala
70	Analysis of the Receiver Architectures of the SLIPT Based Communication	Sumali Morapitiya
87	Robust Dual-Hop Distributed Beamforming for Operation of WSANs with Nominally Rectangular Layouts	Oussama Ben Smida
89	Joint Time and Frequency Synchronization for Beamforming in a Relay System Using Population-Based Algorithms Enhanced with Importance Sampling	Maha Abdelkhalek
129	The Evolution of the Internet of Things (IoT) and Smart Networks: From Inception to Intelligent Edge Computing	Sanjaya Samudra
137	Penetrating the Defenses: An Investigation into the Achilles' Heel of HTTP and SSH	Ashen Wanniarachchi

Track	Construction Dynamics and Digitalisation	Venue - E106
Session Chair	Dr. Chandanie Hadiwattage	
Track Chair	Mr. Thilanka Wijesinghe	
Paper ID	**Title**	**Presnting Author**
109	Enhancement of Quality Management Through Lean in Sri Lankan Construction Industry	J. K. D. D. T. Jayanetti
133	ADOPTION OF A CIRCULAR ECONOMY FRAMEWORK IN THE DESIGN PHASE OF THE REFURBISHMENT PROJECT	Sridaran Abilash
134	THE ADOPTION OF VIRTUAL REALITY (VR) IN DIFFERENT STAGES OF CONSTRUCTION PROJECT	Binakshi Liyanage
141	THE INFLUENCE OF PROJECT MANAGERS' DECISION-MAKING STYLES ON SCHEDULE VARIANCE IN BUILDING CONSTRUCTION PROJECTS	Kavindi Pulasinghe

Day 3 - 11th September 2025
Session 09.00 a.m. - 10.30 a.m.

Track	AI and Data-Driven Engineering	Venue - E101
Session Chair	Dr. Asanka P. Sayakkara	
Track Chair	Dr. Hansani Weeratunga	
Paper ID	**Title**	**Presnting Author**
12	Evaluating the Efficacy of Machine Learning Algorithms for Customer Churn Prediction in The Insurance Industry	Sumedha Kulasekara
64	Enhancing Modern Education Through an AI-Integrated Learning Management and Support System (LMSS)	Jayamuni Rashminda
73	Forecasting Land Prices in Colombo District Using Machine Learning and Spatial Network Analysis	W.G. Kasthuri Dheelaka Weerasinghe
116	Investigating the Deep Learning Performance for Deforestation Mapping using Landsat Multispectral Data	A.M. Chandrika Malkanthi
128	Edge AI-Enabled In-Vehicle System for Comprehensive Remote Surveillance	Nethumina Pananwala
146	Fine-Tuning BERT for Context-Aware Phrasal Verb Disambiguation	Sujair Ibrahim
Track	**Next Generation Communications and Networking**	**Venue** - E102
Session Chair	Dr. Nuwan Kuruwitaarachchi	
Track Chair	Dr. Lasantha Seneviratne	
Paper ID	**Title**	**Presnting Author**
145	A Machine Learning-Based Approach for DDoS Attack Detection and Mitigation on Software-Defined Networking Controller	Rui Dinis
155	Duty Cycle-aware Energy-Efficient MAC Protocol for Single-Layer Hierarchal UAV-WSN	Rajeev Kumar
169	Highly Efficient 3D Object Transmission System for HTC Services in 6G Networks	Anastasia Marochkina
170	Task Scheduling Problem in Fog Computing Environment with improved Memetic algorithm	Artem Volkov
171	Analysis and optimization of OLSR and AODV routing protocols for highly mobile autonomous aerial vehicle networks: experimental performance evaluation in various application scenarios	Luybov Gorbacheva
172	Fog computing power for telepresence suit as user terminal for metaverse	Artem Volkov
Track	**Sustainable Built Environment, Smart Cities and Natural Ecosystems**	**Venue** - E103L
Session Chair	Dr. Renuka Aiyawansha	
Track Chair	Prof. Shiromi Karunaratne	
Paper ID	**Title**	**Presnting Author**
95	Preserving Built Heritage in Sri Lanka through Digital Twin Technology: Opportunities and Implications	Nathasha Kudasinghe
104	Machine Learning-Based Early Warning Systems for Urban Floods: A Case Study in Nilwala Basin	Abayapala A.I.
117	Advancing Transit Oriented Developments (TOD); Strategic Urban Framework for Sustainable Built Environments for Mirigama	Amaya Goonathilaka
139	Spatially Integrated Water and Wastewater Management: A Model Design for Fish Markets in Sri Lanka	Nesura Tharaka Bulathsinghala
153	Flammability Characteristics of Waste-Based Fibre-Reinforced Composite Using Palmyra Fibre and Waste Polythene	H.M.C.C. Somarathna
173	Three Buildings, Three Tools: Why Does Building Life Cycle Assessment Need Standardization?	Abiru Abayapala
Track	**Clean and Renewable Energy Innovations**	**Venue** - E105
Session Chair	Dr Sadun Konara	
Track Chair	Dr. Ruwan Chandrasena	
Paper ID	**Title**	**Presnting Author**
11	Design, Simulation, and Optimization of a Hybrid Hydrogen Fuel Cell–Battery Energy System for Sustainable Electric Vehicle Applications Using MATLAB Simulink	Kesara Samaranayake
41	Synergistic Charge Dynamics and Light Harvesting in TiO_2/MgO Composites for Efficiency Enhancement in CdS Quantum Dot-Sensitized Solar Cells	Nelzi F Ajward
68	Macaranga peltata Leaf Extract mediated Green Synthesis of Iron Nanoparticles and their Application in Organic Dye Removal	Kasuni Dissanayake
106	DEVELOPMENT OF AN AI-BASED MODEL WITH LOW COMPUTATIONAL COMPLEXITY FOR ACCURATE SOLAR ENERGY FORECASTING	I.G.I. Sudesh Chandrasinghe
108	Development of an AI-Based Model with Low Computational Complexity for Accurate Wind Energy Forecasting	T. G. Shiwantha Dilshan Senarathna
Track	**Industy Connect**	**Venue** - E106
Session Chair	Dr. Nishan Dharmaweera	
Track Chair	Prof. Chulantha Kulasekere and Mr. Tilanka Wijesinghe	
Paper ID	**Title**	**Presnting Author**
67	Automating Sri Lankan Mail Sorting: A CNN-Based OCR Approach for Sinhala Handwritten Postal Address Recognition	Arawe Mudiyanselage Prabhath Raveendra Bandara Arawa
92	Faster Than the Teacher, Smarter Than the Student: Classifying with Wisdom via Knowledge Distillation	Gobihanath Balasubramaniam
142	An Investigation of Effective Document Management Strategies for Post-Contract Period Used by Consultant Quantity Surveyors in Sri Lanka	P.H.Yashodha Buddhini
147	Integrating Large Language Models into Personalized Diabetes Care: A Systematic Review of Clinical Applications, Model Adaptation Strategies, and Ethical Implications	J.A.U.S. Jayakody
149	Entrepreneurial Orientation on Talent Acquisition and Retention in Construction SMEs	Madushi De Silva
168	Evaluating the Role of Gamification on AI Technology tools for addressing Post-Traumatic Stress Disorders	Rasika P. Withanage
178	Design, Manufacturing and Operation of a Down draft Gasifier for Coconut Shell Charcoal Generation in Dankotuwa, Sri Lanka	Janith Ratnaweera

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Session 2

Track	Construction Dynamics and Digitalisation	Venue - E101
Session Chair	Dr. Tharusha Ranadewa	
Track Chair	Dr. Shavindree Nissanka	
Paper ID	Title	Presnting Author
37	DEVELOPMENT OF FIELD INSTRUMENT FOR MEASURING ROPE SLIPPAGE IN TRACTION ELEVATOR	Dulina Pankaja Amarasinghe
103	CONSTRUCTION DYNAMICS AND DIGITALISATION	Panadura Arachchige Nihal Premachandra
136	Circular Economy Practices in Road Rehabilitation and Development in Sri Lanka	Chanuri Kalugala
150	Stakeholder Impacts of COVID-19 on Sri Lankan Road Projects: Multi-Class Delay and Resilience Analysis	Pramuditha Coomasaru
151	ElasticNet Machine-Learning Model for Weekly River-Sand Price Floor Prediction in Contractor Procurement	Pramuditha Coomasaru
Track	Next generation Transportation and mobility solutions, Recent Results	Venue - E102
Session Chair	Prof. Chulantha Kulasekere	
Track Chair	Prof. Anurudda Puswewala	
Paper ID	Title	Presnting Author
75	QUANTITATIVE RISK ASSESSMENT OF PEDESTRIANS – TRAIN ACCIDENTS IN THE COLOMBO DIVISION RAILWAY NETWORK	Binushi Rathnayake
143	Impact of emotional intelligence on improving labour productivity in the Sri Lankan construction industry	Pannala Henegedara Buddhini
174	Public Sector Role as a Key Stakeholder Towards the Circular Economy in the Built Environment in Sri Lanka	B.C.T.M. Karunaratne
Track	Bio Medical Engineering & Smart Health Systems	Venue - E103L
Session Chair	Dr. Sanika Wijayasekara	
Track Chair	Dr. Lakmini Malasinghe	
Paper ID	Title	Presnting Author
31	Gesture-Controlled Embedded Interface for Sterile Medical Environments	Keshan Gunasekara
36	Predicting Cognitive Test Performance from New Onset Behavioral and Personality Changes in Adults over 50 using Post-Selection Boosted Random Forest Classifier	Meesha Mervyn
114	Enhancing Healthcare Predictive Models Through Privacy-Preserving Synthetic Data Generation	Malshi Madhuhansi Edirisinghe
118	Predictive Modeling for Personalized Cancer Therapy Using Reinforcement Learning	Malshi Madhuhansi Edirisinghe
Track	Clean and Renewable Energy Innovations	Venue - E 105
Session Chair	Dr Sadun Konara	
Track Chair	Dr. Ruwan Chandrasena	
Paper ID	Title	Presnting Author
121	Development of an AI-Based Model with Low Computational Complexity for Accurate Load Demand Forecasting	Dhanushka Ravindu Akalanka Hettiarachchi
164	A Cost-Effective Battery Retrofit for Non-Hybrid Grid-Tied PV Systems to Reduce Solar Energy Loss During Grid Outages	D. N. A. Jayamaha
175	Solar Hotspot Detection Using VHDL-Simulated Fixed-Point SVM: A Methodology Toward FPGA Realization	Nayomi Fernando
177	A Comparative Study on TiO_2/Graphite–PEG and Graphite/Carbon Fibre-Paraffin Shape Stabilized Phase Change Materials for Thermal Energy Storage Applications	Vimukthi Dananjaya