Infrastructure Engineering Graduate Research Conference (IEGRC) 2024
Beyond Green: Transforming Research into Sustainability

Start	Finish	
8:30 AM	9:00 AM	**Attendees Arrival and Registration**
9:00 AM	9:15 AM	**Conference Opening Ceremony (Center Stage 1)** **Host: Mr Seongyeol Park** President, Graduate Infrastructure Engineering Society **Welcome Message** **Professor Andrew Western** Head of Department of Infrastructure Engineering
9:15 AM	9:25 AM	**Opening Address** **Professor Mark Cassidy** Deputy Vice-Chancellor (Research), The University of Melbourne
9:25 AM	9:50 AM	**Keynote Address (Center Stage 1)** Topic: Pioneering Holistic Solutions for Sustainable Infrastructure **Ms Susan Haris** CEO, Intelligent Transport Systems Australia
9:50 AM	10:30 AM	**Group Photo and Morning Tea (Center Stage 1 and Meeting Place Foyer)**

Morning Sessions

Start	Finish	Forum 1 (Center Stage 1) Structural Engineering Chair: Dr Tharaka Gunawardena	Forum 2 (Meeting Place 1) Geotechnical Engineering Chair: Dr Samintha Perera	Forum 3 (Meeting Place 2) Environmental Hydrology and Water Resources Chair: Dr Wim Brown	Forum 4 (Meeting Place 3) Geomatics Chair: Dr Amir Khodabandh	Forum 5 (Meeting Place 4) Ocean Engineering + Energy+Engineering Management Chair: Dr Joey Voermans
10:30 AM	10:40 AM	Probability Based FEM of Corroded RC Beams *Aliakbar Yaghoubzadehfard*	Field Testing and Numerical Modelling of Battered Minipile Systems *Alberto Escobar*	Worse Droughts Amidst Increasing Precipitation and and Impact on Water Resources *Seongyeol Park*	Ionospheric Modelling for Precise Satellite Positioning *Parvaneh Sadegh Nojehdeh*	Optimizing Sea State Estimates from Vessel Motion *Anran Duan*
10:40 AM	10:50 AM	Feasibility of Repurposing Liquified Natural Gas (LNG) Tanks for Liquid Hydrogen Storage *Amila Premakumara*	Arrangement of shared anchors and distribution of force system *Bin Yan*	Improved decision making in fluoride removal *Akshay Kashyap*	Pole-NN: Few-Shot Classification of Pole-Like Objects in Lidar Point Clouds *Cipher Zhang*	Transfer Function for Adaptive Methods of Estimating Directional Spectra Using a Fully Nonlinear Wave Model *Omar Zain Torres Rios*
10:50 AM	11:00 AM	Module-to-core Connection for Modular Tall Building *Arjun Kandel*	Numerical modelling of pullout of suction bucket under varying pullout rates *Debiprasad Bhakta*	Formation, Persistence, and Breakdown of Thermal Stratification in River Waterholes *Asma Rabiei*	Developing 3D Spatial Graph Database for Underground Utility Networks *Ensiyeh Javaherian Pour*	Numerical simulations of ocean surface waves along the Australian coast with a focus on the Great Barrier Reef *Xianghui Dong*
11:00 AM	11:10 AM	Experimental and numerical study into vehicular collision on the bridge parapet *Chuan Tong*	Integrated Modelling of the Mooring System for Floating Wind Turbines *Yanyan Guo*	Decision Making under Deep Uncertainty for Environmental Water Management *Farkhondeh Sadat Hashemi Madani*	AI-Driven Land Administration for Large Infrastructure Projects *Hamid Hosseini*	Evaluating Hindcast Accuracy for Swell Arrival Times in the Indian Ocean *Xiaoyu Sun*
11:10 AM	11:20 AM	Creating Housing Solutions for Displaced Populations *Kavitha Vipulananda*	Integrating Physics-Informed Neural Networks with Transfer Learning for Modelling Turbidity Currents and Sediment Transport *Farid Fazel*	Evapotranspiration Estimated Using Solar-Induced Fluorescence (SIF) from Airborne Hyperspectral Images over Agricultural Fields *Jia Xu*	BIM-based Land Administration Data Model for Large Infrastructure Projects *Lanxuan Shen*	Submerged Floating Tunnel High-Potential Energy System *Wei Lin*
11:20 AM	11:30 AM	Macro Modelling of Buildings for Seismic Performance Evaluation *Deelaka Sathsara Jayaweerarathne*	An Elasto-Viscoplastic Soil Constitutive Model for Crashworthiness Evaluation of Barrier Piles *Fatemeh Safari Honar*	Towards Robust Monitoring of Total Suspended Solids (TSS) in the Ungauged Urban Reaches of Downstream Ganges River, India, Using Sentinel-2 Imagery and Machine Learning Approaches *Kunwar Abhishek Singh*	Spatially-enabled 3D Asset Recognition in Industrial Plants *Masoud Kamali*	Advancing Retrofit Building Designs: A Multi-Objective Optimization Approach for Climate Change Adaptation *Duc Minh Le*
11:30 AM	11:40 AM	A numerical model to predict thermo-mechanical behavior of molten salt thermal energy storage tank *Santosh Mishra*	Plasticity Analysis of Drag Anchor Installation Considering the Integrated Mooring System *Hong Zhu*	Discrepancy between Simulated L-band Backscatter and UAVSAR Observations in a Wheat Field *Lilangi Wijesinghe*	Scan-to-SARBIM: Producing a Structural-Analysis-Ready BIM from Point Clouds *Mojtaba Akhoundi Khezrabad*	Mult-objective Optimisation of Pre-treatment Process for Anaerobic Digestion of Household Food and Garden Waste *Kexin Hu*
11:40 AM	11:50 AM	Importance of Integration between Sawmilling Process and Prefabrication Manufacturing Requirements *Harshani Dissanayake*	Early Detection of Internal Erosion in Earth Dam *Sanjit Kumar Bhattarai*	Distinct contribution of the blue region and solar-induced fluorescence to needle nitrogen and phosphorus assessment *Peiye Li*	Deep Learning for Vegetation Segmentation from MLS Point Cloud *Aditya*	Depth-Varying Non-Uniform Corrosion effects on Marine Concrete Pile structures *Rishwanth Darun A S*
11:50 AM	12:00 PM	Smart AI Enabled Robotic Technologies for Plastic Waste Sorting *Hasala Sakvithi Rohanawansha*	Three-dimensional plate anchor uplift behaviors in sand *Zhenyu Liu*	The Role of Soil Moisture, Evapotranspiration, and Baseflow in Annual Maximum Flood Events *Posa Poornima Chandra Lekha*	AI-augmented construction cost estimation *Peyman Jafary*	Effects of gait at different walking speeds on bone fracture healing in patients with various body weights *Qianjun Ding*
12:00 PM	12:10 PM	Investigation on Impact Resistance of Concrete Barrier Strengthened with UHPFRC *Jie Sun*	The role of the Particle Size Distribution in the thermo-volumetric response of dry sands *Luis Villegas Negrette*	Transferability of L-band SAR soil moisture retrieval parameters across surface conditions and view angles *Shilpa Koyyan*	A Multi-Temporal Remote Sensing Approach to Analysing Disaster Impacts on Informal Settlements *Ricardo Camacho Castilla*	Toward Engineering Education Transformation with Threshold Learning in First Nations Australian Engineering *Aurora Greane*
12:10 PM	12:20 PM	AI-Driven Loco-manipulation for Quadruped Robots *Chuan Qin*	Multi-Scale Investigation of Mechanical and Hydrological Performance of Permeable Concrete Pavement *Zohreh Fakhar Shakeri*	Community priorities for climate change adaptation *Madeline Grupper*		Assessment of the Thermal Performance of Large-Scale Liquid Hydrogen Storage Tanks **(Structural Engineering)** *Upeka Gunarathne*
12:20 PM	12:30 PM	Dynamic Carbon Accounting Framework for Engineered Wood Production *Yi Qian*	Performance analysis of H2 production system using hot sedimentary aquifer geothermal *Maryam Hamlehdar*			Enhancing the Recycled Concrete aggregate properties via Thermo mechanical treatment method **(Structural Engineering)** *Vithushanthini Arulkumar*
12:30 PM	1:30 PM	**Lunch**				

Afternoon Sessions

Start	Finish	Forum 1 (Center Stage 1) Structural Engineering Chair: A/Prof Xumei Liu	Forum 2 (Meeting Place 1) Geotechnical Engineering Chair: Dr Philip Christopher	Forum 3 (Meeting Place 2) Environmental Hydrology and Water Resources Chair: Dr Yuhang Zhang	Forum 4 (Meeting Place 3) Geomatics Chair: Dr Serene Ho	Forum 5 (Meeting Place 4) Transport Chair: Prof Russel Thompson
1:30 PM	1:40 PM	Design of high-strength concrete filled steel tubular columns under nonuniform fires *Lalita Lama*	Mapping Microannular Voids Formation on Existing Wellbore Cement for Underground Hydrogen Storage *Amirthan Thirukumaran*	When is a knowledge gap filled in environmental monitoring? *Xiaoyan Dai*	Equi-GSPR: Equivariant SE(3) Graph Network Model for Sparse Point Cloud Registration *Xueyang kang*	Modelling the effects of travel time use on mode choice and the value of travel time savings *Ana Luiza Santos de Sa*
1:40 PM	1:50 PM	Development of Waste Wood Composites for Load-bearing Engineered Wood Products *Isuri Tamura Amarasinghe*	Numerical assessment of ground heat exchangers performance in a pit lake environment *Mauricio Carcamo Medel*	Leveraging On-Site River Data and Heteroskedasticity in Bayesian Rating Curves *Sai Vikas Kona*	Open World Object Detection with Vision-Language Model *Zizhao Li*	ETA Predictions for Physical Internet Hubs *Anshul Vijay*
1:50 PM	2:00 PM	Numerical Modelling of Liquid Hydrogen Boil-off *Merinnage Susiri Vidarshaka Costa*	Impact of Sample Preparation on Erosion and Post Erosion Mechanical Behaviour of Gap-Graded Soils *Meysam Mousavi*	Changes to rainfall intermittency at the catchment scale in Australia *Steven Thomas*	Predictive Models and Tools for Real-Time Flood Monitoring *Alireza Haji Heidari*	AI-Driven Audio Signal Processing Applied in Intelligent Transportation Systems *Hossein Parineh*
2:00 PM	2:10 PM	Numerical Analysis of Steel-Concrete Composite Shear Wall at Elevated Temperature *Nav Raj Bhatt*	Numerical modelling of suction caissons under cyclic loading *Nazish Ullah*	Atmospheric Rivers leading to extreme flooding *Sucheta Pradhan*	Global localization for Mixed Reality visualization using wireframe extraction from images *Sajjad Einizinab*	Investigation on the effects of road pricing on road safety *Humberto Barrera-Jimenez*
2:10 PM	2:20 PM	A study on the durability of bamboo strips using the constant immersion method *Nimisha Kattumunda*	Soil-Structure Interaction Framework for Monopiles in Sand under Cyclic Loading *Olgu Orakci*	Network topology drives population temporalvariability in experimental habitat networks *Yiwen Xu*	AI-Driven BIM Model Requirements for Automated Building Code Compliance *SeyedehFatemeh Mirhosseini*	Electric Vehicle Charging Access: User Perspectives and Implications to Accessibility *Isrrah Malabanan*
2:20 PM	2:30 PM	Impact of Progressive Expansion of Dataset on CNN Performance in Plastic Waste Sorting *Nuwan Dewapurage*	Smart Offshore Site Investigation Using Free-Fall Penetrometers *Parviz Tafazzoli Moghaddam*	Challenges of using robustness metrics for water resources system management under uncertainty *Yuan Cao*	Low Earth Orbit (LEO)-augmented positioning in heavily GNSS signal-obstructed environments *Songfeng Yang*	Feature-Aware Unsupervised Detection of Important Nodes in Graphs *Mohammadreza Ghanbari*
2:30 PM	2:40 PM	Seismic performance and earthquake design of composite modular buildings *Omar Ahmed Mohamed Morsy*	Assessing Caprock Integrity for Underground Hydrogen Storage in Depleted Gas Reservoirs *Pramod Dilshan*	Decadal Cycles in Global Rainfall – Initial Results *Tobias Selkirk*	Occupancy Grid Mapping with Uncertain LiDAR Data *Yuguang Liu*	AI-Powered transit simulator: Integration between microscopic simulation and machine learning *Mustafa Rezazada*
2:40 PM	2:50 PM	Sustainable Structural Insulated Panel System for a Decarbonised Construction Industry *Rannulu Nipun De Zoysa*	Installation of helical pile in clayey soil *Zeliang Li*	Improve representation of multi-annual dynamics in rainfall-runoff models *Ziqi Zhang*	Latent-conditioned point cloud diffusion for object augmentation in driving scenes *Zhengkang Xiang*	General algorithm of assigning raster features to vector maps at any resolution, size or scale *Nan Xu*
2:50 PM	3:00 PM	Optimisation framework for design-to-delivery of prefabricated timber systems *Sasindu Randil Samarawickrama*	Large Deformation Modelling: a numerical approach in offshore geotechnics *Ran Tu*	Estimating Nutrient Inputs to Agricultural Land Use to Predict Surface Water Quality *Olaleye John Babatunde*	Strategic Allocation of Landmarks to Reduce Uncertainty in Indoor Navigation *Reza Arabsheibani*	Developing a hyperconnected and resilient logistic network design for peri-urban freight transportation *Simon Anthony Lorenzo*
3:00 PM	3:10 PM	Characterisation and Double-Sided Pullout Study of Recycled Flowline Steel Fibres *Vito Nathaniel Lokito*	The influence of OWT installation process on the monopile foundation behaviour *Shen Xie*	Flood Monitoring: A Hydrologically Guided Methodology for Infilling Missing Pixels in Satellite Images *Xinqi Guo*		
3:10 PM	3:20 PM	Missing Data Imputation for Structural Health Monitoring Using Modified WGAIN-GP *Sumit Saha*	Fluid Inertia Effect on Flow Through Fracture Intersections *Amila Vimukthi Edirisinghe*	Evaluating evapotranspiration equations in conceptual hydrological models: insights from flux tower data *Gabrielle Burns*		
3:20 PM	3:30 PM	High-temperature Stability of Innovative Geocrete for Thermal Energy Storage (TES) *Tran Phuc Nghia*	Influence of Fluid Rheology on Fluid Flow in Natural Fracture Network *Mai Cuong Bui*			
3:30 PM	4:00 PM	**Afternoon tea**				

Start	Finish	
4:00 PM	5:00 PM	**Panel Discussion (Center Stage 1)** Topic: Bridging the Gap by Transforming Research into Industry-Ready Sustainable Solutions Moderator: Panelists: **Dr Kiernan Fowler** **Dr Serryn Eaglesoon** **Prof. Alex Felson** **Dr Patricia Sauri Lavieri** Senior Lecturer, Department of Infrastructure Engineering Digital Advisory Lead, Arup Elisabeth Murdoch Chair, Landscape Architecture Senior Lecturer, Department of Infrastructure Engineering
5:00 PM	5:30 PM	**Conference Closing Ceremony (Center Stage 1)** **Award Ceremony and Lucky Draw** **Thank You Speech** **Professor Lihai Zhang** Research Higher Degree Coordinator
5:30 PM	6:30 PM	**Networking Session (Meeting Place Foyer)**