

## PROGRAM AT A GLANCE

**Conference Date: 18/03/2023**

**Time: 7:30 – 17:35**

**Venue: Swinburne Innovation Space, 80 Duy Tan, Cau Giay, Hanoi**

**Round Table Date: 19/03/2023**

**Time: 8:30 – 12:00**

**Participants: ICISN 2023 Chairs and Delegates**

### PLENARY SESSION

Room: 1.1

Time	Contents	Topic
7:30 - 8:30	Registration	
8:30 - 8:35	MC Introduction	
8:35 - 8:40	Welcome Speech from Director of Swinburne Vietnam and Co-chair of ICISN 2023 - Dr. Hoang Viet Ha	
08:40 - 8:45	Speech from Pro Vice - Chancellor of Swinburne University of Technology - Dr. Douglas Proctor	
8:45 - 8:50	Speech from ICISN 2023 Program Chair: Dr. Vijender Kr Solanki, CMR Institute of Technology, Hyderabad, India	
08:50 - 9:15	Keynote Speaker: Dr. Seok - Joo Koh, Director of Software Education Institute, Kyungpook National University, Korea	<i>QUIC: a next-generation transport protocol</i>
9:15 - 9:40	Keynote Speaker: Mr. Alan Ho, Vice President of International Marketing of DataStax, Singapore	<i>Build fast, Scale without limits: Real-Time Data Cloud</i>

9:40 - 10:05	<b>Keynote Speaker: Dr. Hoang Hung Hai, Staff Manager in Product Marketing, Qualcomm Vietnam</b>	<i>Driving the Commercialization of Edge AI</i>
10:05 - 10:20	Coffee break	
10:20 - 12:00	Parallel discussion session 1	
12:00 - 13:00	Lunch	
13:15 – 13:30	<b>Keynote Speaker (Recorded Video): Prof. Patrick Hanghui Then, Head of School of ICT, Faculty of Engineering, Computing and Science, Swinburne University of Technology, Sarawak Campus, Malaysia</b>	<i>Digital Health journey for cough sound artificial intelligence</i>
13:30 - 13:55	<b>Keynote speaker: Dr. Le Nhan Tam, Chief Technology Officer, Microsoft Vietnam</b>	<i>Microsoft Azure OpenAI Services and Enterprise ChatGPT</i>
13:55 - 14:20	<b>Keynote Speaker: Dr. Shiqi Yu, Associate professor in the Department of Computer Science and Engineering, Southern University of Science and Technology, Shenzhen, China</b>	<i>Gait recognition: the progress and the challenges</i>
14:20 - 14:45	<b>Keynote Speaker: Mr. Le Hong Viet, Chief Executive Officer, FPT Smart Cloud</b>	<i>AI-powered CX to drive business growth</i>
14:45 - 15:10	<b>Keynote Speaker: Prof. Alex Stojcevski, Dean – School of Science, Computing &amp; Engineering Technologies Swinburne University of Technology, Australia</b>	<i>Technology trends, their impact on Higher Education and Industry Engagement</i>
15:10 - 15:25	Coffee break	
15:25 - 17:35	Parallel discussion session 2	
17:35	Ending	

## INDUSTRY TRACK

Room 1.1

10:20 – 12:00

**Chair: 1. Dr. Le Anh Ngoc – Director, Swinburne Innovation Space**  
**2. Mr. Tran Huu Cong – Director, GAM.DAP**

Time	Speaker	Company	Topic
10:20 - 10:30	Mr. Anders Pettersson	Director of Sales Enablement, Silicon Labs	<i>WiSUN for Smart Cities</i>
10:30 - 10:40	Mr. Ngo Thanh Hien	CTO & Technical Sales Leader, IBM	<i>Enhance your business with integrated AI-based automation</i>
10:40 - 10:50	Mr. Duc Dang	Head of Partnership and Business Development, Intel	<i>Inside the AI brain - Unlocking AI with Ubiquitous hardware and open software</i>
10:50 - 11:00	Mr. Hoang Ngoc Duy	Presale, VNPT	<i>VNPT AI solution - bridge to new business models</i>
11:00 - 12:00	Industrial Panel Discussion	Qualcomm Vietnam, DataStax, Silicon Labs, IBM, Intel, VNPT, VCCorp, Avada, FPT, Microsoft Vietnam	<i>Digital Transformation based on ICT Innovations</i>

## ORAL SESSION 1 10:20 – 12:00

### TRACK 1 – AI AND APPLICATIONS (1) Room 2.2

**Chairs: 1. Dr. James George Jackson – Swinburne University of Technology**  
**2. Dr. Phat Nguyen Huu - Hanoi University of Science and Technology (HUST)**

Time	Paper ID	Name of Authors	Manuscript Title
10:20 -10:40	786	Phat Nguyen Huu, Bach Le Gia, Bang Nguyen Anh, Quang Tran Minh, Dinh Dang Dang, Thanh Le Thi Hai	Proposing lung abnormality detection model using AI
10:40 – 11:00	7435	Yen Thi Hoang Hua, Giang Nguyen Hong, Liet Dang Van	Detection of abnormalities in mammograms by thresholding based on wavelet transform and morphological operation
11:00 – 11:20	552	Phat Nguyen Huu, Quyen Nguyen Thi, Quang Tran Minh, Dinh Dang Dang, Thanh Le Thi Hai	Design of measuring and warning system based on sound intensity in high-traffic areas
11:20 11:40	224	Hong Giang Nguyen, Hoang Yen Hua Van Liet Dang	MRI brain tumor image thresholding using enhancement base on bidimensional empirical mode decomposition and morphological operations
11:40 – 12:00	4967	Ha Xuan Nguyen, Phuc Hong Pham	Development of a deep learning-based object detection and localization model for controlling a robotic pick-and-place system

**TRACK 2 – IMAGE, VIDEO AND SIGNAL PROCESSING (1)**  
**Room: 2.3**

**Chairs: 1. Dr. Shiqi Yu – Southern University of Science and Technology, Shenzhen, China**  
**2. Dr. Vu Tran Anh - Hanoi University of Science and Technology (HUST)**

Time	Paper ID	Name of Authors	Manuscript Title
10:20 -10:40	9695	Kien Nguyen Phan, Cuong Nguyen Manh, Hanh Nguyen Hong, Ngoc Doan Thi Anh, Trang Nguyen Minh, Hien Pham Thu, Phuong Do Thi Minh, Binh Doan Thanh, Long Nguyen Viet, Vu Tran Anh	Evaluation system for straight punch training: a preliminary study
10:40 – 11:00	1644	Hoang Quang Huy, Ngo Tien Dat, Dinh Nghia Hiep, Nguyen Ngoc Tram, Tram Anh Vu, Pham Thi Viet Hung	Pancreatic cancer detection based on CT images using deep learning
11:00 – 11:20	477	Thang Bui Quy, Jong-Myon Kim	Fluid pipeline leak localization relying on acoustic emission signal analysis
11:20 – 11:40	1689	Hang Dang Thuy, Hue Chan Thi, Do Van Dinh	Detecting imbalance of patients with vestibular diagnosis using support vector machine
11:40 – 12:00	2123	Huu Cuong Thieu, Minh Nghia Pham, Ngoc Tan Nguyen, Van Dung Nguyen, Duc Hoc Tran	Novel forest height extraction method based on neuman volume scattering model from PolInSAR images

## TRACK 3 – DIGITAL TRANSFORMATION

Room: 7.1

**Chairs: 1. Dr. Vijender Kumar Solanki – CMR Institute of Technology, Hyderabad, India**  
**2. Dr. Thiem Pham Van – Phenikaa University**

Time	Paper ID	Name of Authors	Manuscript Title
10:20 – 10:40	1422	Hung Ho Dac, Len Vo Van, Bao Nguyen The, Cuong Nguyen Hai Vinh, Phuong Nguyen Cao Hoai, Chien Nguyen Khac, Huu Tran Van	Improving availability of enterprise blockchain using real-time supervisor
10:40 – 11:00	1931	Hung Ho Dac, Len Vo Van , Bao Nguyen The , Cuong Nguyen Hai Vinh , Phuong Nguyen Cao Hoai , Chien Nguyen Khac , Huu Tran Van	Framework for digital academic records management using blockchain technology
11:00 – 11:20	3482	Cong Doan Truong , Thao Vi Nguyen , Anh Binh Le	Odoo: a highly customizable ERP solution for Vietnamese businesses
11:20 – 11:40	6899	Nguyen Quang Hieu , Nguyen Le Quy Duong , Le Quang Hoa , Nguyen Quang Dat	An approach to extract information from academic transcripts of HUST
11:40 – 12:00	9570	Nguyen Van Duc , Nguyen Ho Quang , Le Dinh Than , Vijender Kumar Solanki , Tran Tuan Anh , Le Chi Hieu , Nikolay Zlatov , Georgi Hristov , Plamen Zahariev	Digital twin for field robotics in healthcare

**TRACK 4 – INTELLIGENT COMPUTING (1)**  
**Room: 7.2**

**Chairs: 1. Dr. Nguyen Phuong Anh - Swinburne University of Technology**  
**2. Dr. Quynh Nguyen Thi Thanh – Phenikaa University**

Time	Paper ID	Name of Authors	Manuscript Title
10:20 – 10:40	688	Khang Nhut Lam, Y Nhi Thi Pham, Jugal Kalita	Cooking recipe generation based on ingredients using ViT5
10:40 – 11:00	1690	Phuong Anh Nguyen, Anh Ngoc Le	Outage constrained robust secure transmission for a MISO SWIPT system
11:00 – 11:20	3434	Thuy Nguyen Thi Thu, Thi Lich Nghiem, Dung Nguyen Duy Chi	Predict risk assessment in supply chain networks with machine learning
11:20 – 11:40	5549	Minh Phuong Han, Minh Hoan Pham, Trung Tuan Nguyen, Trung Tung Doan	Predicting student study performance in a business intelligence system
11:40 – 12:00	6656	Luong Van Hieu, Do Trung Kien	Scalable energy efficiency protection model with directed p-cycles in elastic optical network

**TRACK 5 – AUTOMATION AND CONTROL (1)**  
**Room: 7.3**

**Chairs: 1. Prof. Seok Joo Koo – Kyungpook National University, Korea**  
**2. Dr. Nguyen Quang Vinh - Academy of Military Science and Technology**

Time	Paper ID	Name of Authors	Manuscript Title
10:20 – 10:50	237	Van Truong Nguyen , Hai Binh Giap , Ngoc Tien Tran , Ngo Huu Manh , Van Anh Nguyen	A study on fuzzy nonsingular fast terminal sliding mode control for pendubot with uncertainties
10:50 – 11:20	1529	Van Truong Nguyen , Quoc Cuong Nguyen , Dinh Hieu Phan , Thanh Lam Bui, Xiem Hoang Van	Optimized PID controller for two-wheeled self-balancing robot based on genetic algorithm
11:20 – 11:40	1680	Van Chuong Le , The Anh Mai , Tri Nam Cuong Ngo	Robust adaptive control for industrial robots using sliding mode control and RBF neural network
11:40 – 12:00	2463	Tuan Nguyen Ngoc , Luat Dao Sy , Tinh Tran Xuan	Power management for distributed DC Microgrid under minimum system price
12:00 – 12:20	2818	Vu Minh Duc , Chu Anh My , The Nguyen Nguyen , Duong Xuan Bien, Chi Hieu Le, James Gao, Nikolay Zlatov, Georgi Hristov, Van Anh Nguyen, Jamaluddin Mahmud, Michael S. Packianather	Prediction of the welding process parameters and the weld bead geometry for robotic welding applications with adaptive neuro-fuzzy models



## POSTER SESSION

### TRACK 7 - POSTER

Room: 7.5  
(10:20 – 11:00)

#### Chairs:

1. Prof. Wenquan Jin, Yanbian University, Yanji 133002, China
2. Dr. Tran Duc Tan – Phenikaa University

No.	Paper ID	Name of Authors	Manuscript Title
1	3998	Quoc Nam Tang , Van Tien Hoang , Anh Van Nguyen , Dinh Quan Nguyen	Development of an autonomous mobile robot system for hospital logistics in quarantine zones
2	4068	Minh Duc Duong , Duc Long Nguyen , Van Hung Nguyen	Position control for series elastic actuator robot using sliding mode control
3	7496	Kien Nguyen Phan , Huynh Nguyen Cong , Hoang Pham Viet , Linh Nguyen Hoang , Nhung Dinh Thi , Vu Tran Anh	Determine the relation between height-weight-bmi and the horizontal range of the ball when doing a throw-in
4	9069	Than Thi Thuong , Vo Thanh Ha , Le Ngoc Truc	Intelligent control for mobile robots based on fuzzy logic controller

No.	Paper ID	Name of Authors	Manuscript Title
5	8414	Nguyen Van Nam, Manh Linh Nguyen, The Co Nguyen, Trung Nghia Bui, Duy Phuong Nguyen, Cong Minh Nguyen	Interactive control between human and omnidirectional mobile robot: a vision-based deep learning approach
6	9082	Thai Viet Dang , Dinh Son Nguyen	Optimal navigation based on improved a algorithm for mobile robot
7	7014	Nguyen Thi Dieu Linh , Nguyen Trung Tan , Hoang Manh Kha , Kieu Xuan Thuc, Tran Quang Bach	The integration of global navigation satellite system kinematic positioning and inertial measurement unit for highly dynamic surveying and mapping applications
8	6235	Nguyen Trung Tan , Nguyen Thi Dieu Linh , Bui Minh Tin	Analytic constrains for improving performance of the INS/ GNSS integrated navigation system
9	4906	Thanh Trung Cao , Manh Hung Vu , Van Chung Nguyen , The Anh Nguyen , Phuong Nam Dao	Formation control scheme of multiple surface vessels with model predictive technique
10	9465	Thanh Trung Cao , Van Quang Nguyen , Hoang Anh Nguyen Duc , Quang Phat Nguyen , Phuong Nam Dao	Policy iteration-output feedback adaptive dynamic programming tracking control for a two-wheeled self balancing robot
11	6295	Luong Thi Theu , Huy Tran Quang , Duc Tan Tran	Imaged ultrasonic scattering object using beamforming strategy along with frequency compounding
12	4751	Thi Hue Luu , Van Chung Nguyen , Tung Lam Nguyen	Nonlinear model predictive control with neural network for dual-arm robots

No.	Paper ID	Name of Authors	Manuscript Title
13	7842	Duy Nguyen Trung , Thien Nguyen Van , Hai Le Xuan , Dung Do Manh , Duy Hoang , Hoang Nguyen Le	Reinforce control for planar robot based on neural network and extended state observer
14	1974	Trung Tin Tran , Minh Tung Tran , Van Dat Tran , Thu Hong Phan Thi	A comparison of deep learning models for predicting calcium deficiency stage in tomato fruits
15	8347	Tien Quang Dam , Duy Khanh Ninh , Anh Ngoc Le , Tran Duc Le	Danaflood: A solution for scalable urban street flood sensing
16	9585	Luu Bach Hung , Lam Sinh Cong , Tran Duc Tan , Sanya Khrualong	Different user classification algorithms of FFR technique
17	2283	Xuan Truong Nguyen , Kim Phuong Phung , Van Phuc Hoang , Hoa Tien Vu	Q-learning based multiple agent reinforcement learning model for air target threat assessment
18	8074	Moon Halder , Ayon Datta , Md Kamrul Hossain Siam , Shakik Mahmud , Md. Saem Sarkar , Md. Masud Rana	A systematic review on crop yield prediction using machine learning
19	9831	Van Quy Hoang, Thi Kim Dung Pham, Hoang Huy Ngo, Van Huy Tran	Improved efficient network for efficient manifold ranking-based image retrieval

## ORAL SESSION 2 15:25 – 17:30

### TRACK 1 – INTELLIGENT COMPUTING (2) Room: 2.2

**Chairs:**

1. Prof. Wenquan Jin, Yanbian University, Yanji 133002, China
2. Dr. Le Minh Duc – Swinburne University of Technology

Time	Paper ID	Name of Authors	Manuscript Title
15:25 – 15:55	6757	Ha Nguyen Thi Thu, Linh Bui Khanh, Nguyen Xuan Trung	Ranking E-learning systems in Vietnamese K12 market based on multiple criteria
15:55 – 16:15	7118	Wenquan Jin , Kien Luong Trung , Ngoc Le Anh, Minh Quang Hoang	Continuous deep learning based on knowledge transfer in edge computing
16:15 – 16:35	7870	Huynh Quang Duc	Proposing a semantic tagging model on bilingual English Vietnamese corpus
16:35 – 16:55	9690	S. Raschid Muller , Elerod D. Morris II	Analyzing information security among nonmalicious employees using the UTAUT2
16:55 – 17:15	3129	Ninh Duong Bao , Jing He , Luong Nguyen Thi , Seon Woo Lee , Khanh Nguyen Huu	Evaluation of valued tolerance rough set and decision rules method for wifi-based indoor localization in different environments

**TRACK 2 – AUTOMATION AND CONTROL (2)**  
**Room: 2.3**

**Chairs: 1. Prof. Seok – Joo Koo - Kyungpook National University, Korea**  
**2. Dr. Nguyen Ho Quang - Thu Dau Mot University**

Time	Paper ID	Name of Authors	Manuscript Title
15:25 – 15:45	2822	Dang Khoa Nguyen , Huu Cong Vu	Simplified model predictive current control to balance neutral-point voltage for three-level sparse four-leg VSI
15:45 – 16:05	3107	Duc Thinh Le , The Anh Nguyen , Xuan Duc Pham , Quoc Manh Le , Nhu Toan Nguyen , Danh Huy Nguyen , Duc Chinh Hoang , Tung Lam Nguyen	Extended state observer-based backstepping sliding mode control for wheel slip tracking
16:05 – 16:25	3204	Chung Nguyen Van , Duong Dinh Binh , Hien Nguyen Thi , Hieu Le Xuan , Mai Hoang Thi , Thu Nguyen Thanh , Hue Luu Thi , Hoa Bui Thi Khanh , Tung Lam Nguyen	Lyapunov-based model predictive control for 3D-overhead cranes: Tracking and payload vibration reduction problems
16:25 – 16:45	3574	Dai Pham Duc, Khoa Nguyen Dang	Optimal pressure regulation in water distribution systems based mathematical program with vanishing constraints
16:45 – 17:05	3890	Bao Long Pham, Thanh Nguyen Viet, Vuong Dinh Van, Quy Thinh Dao, Minh Duc Duong	Adaptive radial-basis function neural network control of a pneumatic actuator
17:05 – 17:25	5153	Duc Cuong Vu , Thuy Hang Nguyen Thi , Dinh Dat Vu , Viet Phuong Pham , Danh Huy Nguyen , Tung Lam Nguyen	H-infinity optimal full-state feedback control for a ball-balancing robot

**TRACK 3 – AI AND APPLICATIONS (2)**  
**Room: 7.1**

**Chairs: 1. Dr. Vijender Kumar Solanki - CMR Institute of Technology, Hyderabad, India**  
**2. Dr. Ngoc Dung Bui - University of Transport and Communications**

Time	Paper ID	Name of Authors	Manuscript Title
15:25 – 15:45	2729	Van Hieu Vu , Anh Minh Nguyen	Detection and diagnosis of atopic dermatitis using deep learning network
15:45 – 16:05	6068	Ha Xuan Nguyen , Dong Nhu Hoang , Hoang Bui Viet , Tuan Minh Dang	Development of a human daily action recognition system for smart-building applications
16:05 – 16:25	6635	Thi Ngoc Diem Pham , Si Quych Di Chau , Quang Thien Duong , Hoang Le Chi Tran , Thanh Hai Nguyen , Thanh Dien Tran	Detection of fence climbing behavior in surveillance videos using YOLO v4
16:25 – 16:45	9314	Nghia Thinh Nguyen , Duy Khanh Ninh , Van Dai Pham , Tran Duc Le	DTTP model - a deep learning-based model for detecting and tracking target person
16:45 – 17:05	3345	Long Ngo , Ngoc Dung Bui , Moeurn Soklin , Danh Thanh Nguyen , Xuan Tung Hoang , Viet Dung Nguyen , Dinh Truong Nguyen , Thanh Binh Ngo	Deep Learning-based Object Tracking for AGV Robot
17:05 – 17:25	3720	Trong Binh Nguyen , Hoang Khoi Do , Minh Duong Nguyen , Tien Hoa Nguyen	Personalize federated learning via momentum adaption

**TRACK 4 – IMAGE, VIDEO AND SIGNAL PROCESSING (2)**  
**Room: 7.2**

**Chairs: 1. Dr. Shiqi Yu – Southern University of Science and Technology, Shenzhen, China**  
**2. Dr. Minh Nghia Pham – Le Quy Don Technical University**

Time	Paper ID	Name of Authors	Manuscript Title
15:25 – 15:45	6476	Anh Tu Nguyen , Huy Anh Bui	Multiple target activity recognition using combination of YOLOv5 and LSTM
15:45 – 16:05	2994	Trung Khanh Le , Duc Hung Le , Trong Tu Bui	An all-digital implementation of resonate-and-fire neuron on FPGA
16:05 – 16:25	6507	Quang Manh Duong , Xuan Uoc Dao , Hai Duong Nguyen , Huong Thao Ngoc Tran , Ngoc Hai Le , Quang Kien Trinh	An analysis of the effectiveness of cascaded and CAM-assisted bloom filters for data filtering
16:25 – 16:45	6773	Hiep Nguyen Sy , Hai Luong Quang , Nghia Tran Duc , Tran Duc Tan	Evaluating the improvement in shear wave speed estimation affected by reflections in tissue
16:45 – 17:05	2428	Quoc Hung Pham , Van Sang Doan , Minh Nghia Pham , Quoc Dung Duong	Real-Time Multi-Vessel classification and tracking based on StrongSORT-YOLOv5
17:05 – 17:25	7099	Ngoc My Nguyen , Phuong Ha Dang Bui , Kiet Quoc Nguyen , Hai Thanh Nguyen	Efficiency evaluation of hanning window-based filter on human skin disease diagnosis

## TRACK 5 – SOFTWARE ENGINEERING

Room: 7.3

**Chairs: 1. Prof. Alex Stojcevski – Swinburne University of Technology, Australia**  
**2. Dr. Lam Sinh Cong - VNU University of Engineering and Technology**

Time	Paper ID	Name of Authors	Manuscript Title
15:25 – 15:55	6936	Hee-Bean Nam , Joong-Hwa Jung , Dong-Kyu Choi , Seok Joo Koh	Framework of infotainment services for public vehicles
15:55 – 16:15	1004	Vijay Janyani , Shalini Khare , Amit Kumar Garg , Aditi Phophaliya , Ghanshyam Singh	Ring-based hybrid GPON network with Inter-ONU transmission capability
16:15 – 16:35	3951	Yadala Sycharitha , Pundru Chandra Shaker Reddy, Vijender Kumar Solanki	A novel private encryption model in IoT under cloud computing domain
16:35 – 16:55	3686	Vikram Puri, Vijender Kumar Solanki, Gloria Jeanette Ricón Aponte	Blockchain and federated learning based integrated approach for agricultural internet of things
16:55 – 17:15	9393	Duc Minh Le , Van Dai Tran , Cédrick Lunven , Alan Ho	On the principles of microservice-NoSQL-based design for very large scale software: a Cassandra case study
17:15 – 17:35	6289	Thanh Khiet Bui	Fault analysis approach of physical machines in cloud infrastructure



## TRACK 6 – SMART ELECTRONIC SYSTEMS

Room: 7.4

**Chairs: 1. Dr. James George Jackson – Swinburne University of Technology**

**2. Dr. Khoa Nguyen Dang - VNU – International School**

Time	Paper ID	Name of Authors	Manuscript Title
15:25 – 15:45	5566	Tam Tran , Cong Doan Truong , Anh Ngoc Le	Agent-based service change detection in IoT environments
15:45 – 16:05	4240	Ha Xuan Nguyen , Dong Nhu Hoang , Tuan Minh Dang	Development of a high-speed and accurate face recognition system based on FPGAs
16:05 – 16:25	7909	Minh Hoang Dang, Viet Binh Do, Xuan Tung Truong, Tran Cong Tan, Lan Anh Nguyen	A synthetic crowd generation framework for socially aware robot navigation
16:25 – 16:45	5437	Xuan Chinh Pham , Thi Phuong Thao Nguyen , Minh Thuy Le	Pathloss modelling and evaluation for a wireless underground soil moisture sensor network
16:45 – 17:05	4869	Vijay Janyani , Manish Jangid , Ghanshyam Singh	A multi-layer structured surface plasmon resonance sensor with improved sensitivity
17:05 – 17:35	8408	Md Kamrul Hossain Siam , Noshin Tasnia , Shakik Mahmud , Moon Halder , Md. Masud Rana	A next-generation device for Crop yield prediction using IoT and Machine Learning