

12 September 2023 Tuesday

14:00 - 16:00 Registration

13 September 2023 Wednesday

08:00 - 09:00 Registration

09:00 - 09:20 ICAIET 2023 Opening Ceremony

09:20 - 09:30 Photo Session

09:30 - 10:20 Keynote 1:
Assoc. Prof. Dr. Jamal Ahmad Dargham
Universiti Malaysia Sabah, Malaysia
Title: Artificial Intelligence (AI) and the Future of Mankind

10:20 - 10:30 Tea Break

10:30 - 11:20 Keynote 2:
Dr. Sainarayanan Gopalakrishnan
HCL Technologies LTD, India
Title: Bridging the Computer Vision Dimensions: Intertwine of Data, Computing and Performance.

11:20 - 11:30 Short Break

11:30 - 12:30 Parallel Session A
A1: Data Augmentation and Utilisation
A2: Smart Agriculture
A3: Machine Learning in Agriculture Applications

12:30 - 14:00 Lunch

14:00 - 15:15 Parallel Session B
B1: Intelligent Control and Robotics
B2: Machine Learning in Behavioural Applications
B3: Communication Technology

15:15 - 15:30 Tea Break

15:30 - 16:30 Parallel Session C
C1: Smart Building
C2: Machine Learning Applications

14 September 2023 Thursday

08:00 - 09:00 Registration

09:00 - 10:15 Parallel Session D
D1: Pattern Classification for Speech and Text Applications
D2: Image Processing Applications

10:15 - 10:30 Tea Break

10:30 - 12:00 Parallel Session E
E1: Machine Learning in Biomedical Applications
E2: Internet of Things (IoT)

12:00 - 14:00 Lunch

14:00 - 15:15 Parallel Session F
F1: Machine Learning Applications
F2: Modelling and Simulation

15:15 - 15:30 Tea Break

15:30 - 16:30 Parallel Session G
G1: Image and Signal Processing
G2: Smart Energy

CONFERENCE PROGRAM

Session A1: Data Augmentation and Utilisation

Session Chair: Associate Professor Dr. Jamal A. Dargham

Paper ID	Paper Title	Authors
187	Characterisation of Data Augmentation Techniques using Visualisation	Kin Wai Lee and Renee Ka Yin Chin
18	Long-Term Forecast of Emergency Demand Using EMS Big Data and Population Estimates by Age	Masaki Kaneda, Sinan Chen, Masahide Nakamura and Sachio Saiki
143	Data Augmentation Approach for Language Identification in Imbalanced Bilingual Code-Mixed Social Media Datasets	Mohd Suhairi Md Suhaimin, Mohd Hanafi Ahmad Hijazi, Ervin Gubin Moug and Mohd Azwan Mohamad Hamza
55	Leveraging Knowledge Graphs for Orphan Entity Allocation in Resume Processing	Shubham Gandhi, Aagam Bakliwal and Yashodhara Haribhakta

Session A2: Smart Agriculture

Session Chair: Dr. Florence Sia

Paper ID	Paper Title	Authors
98	Smart Rooftop Farming Using IoT and Mobile Application in Brunei	Nur Afiqah Natasya Haji Sadikin, Ravi Kumar Patchmuthu and Wida Susanty Haji Suhaili
33	Day-Old Chick Sexing using Convolutional Neural Network (CNN) and Computer Vision	Heidee Soliman-Cuevas and Noel Linsangan
61	Benchmarking CNN Models for Black Pepper Diseases and Malnutrition Prediction	Olivia Ching Hui Chen, Chih How Bong and Nung Kion Lee
52	Hyperparameter Tuning of Convolutional Neural Network for Fresh and Rotten Fruit Recognition	Florence Sia and Nur Shabirah Binti Baco

Session A3: Machine Learning in Agriculture Applications

Session Chair: Dr. Lorita Angeline

Paper ID	Paper Title	Authors
177	Advancing Weed Detection in Agricultural Landscapes using Computer Vision	Bei Ren Tan, Ervin Moug, Muhd. Nur Afnan Uda, Kenneth Tze Kin Teo and Lorita Angeline
45	Nondestructive Freshness Classification System for Cultured Pacific White Shrimp using Electronic Nose and Artificial Neural Network	Jamie Eduardo Rosal, Daryl Ivan Hisola and Sairia Faith Cadiz
47	Detection and Classification of Copra Meat Dryness Using Faster Region-Based Convolutional Neural Network with Inception v2 Architecture	Jamie Eduardo Rosal, Juvy Amor Galindo and Ferhanelfren Mao
141	Grade Classification of Yellowfin Tuna Meat Using F-RCNN with Inception V2 Architecture	Jamie Eduardo Rosal, Daryl Ivan Hisola and May Demabildo

Session B1: Intelligent Control and Robotics

Session Chair: Ir. Dr. Chua Bih Lii

Paper ID	Paper Title	Authors
133	Efficient Robot Following for Enhanced Formation Control in Limited Computing Environments	Pin Jin, Yuhan Wang, Zhuo Zou, Zhongxue Gan and Lizheng Liu
176	Design and Development of a Pipe Climbing Mechanism	Kean Teong Yeoh, Wai Heng Choong, Renee Ka Yin Chin and Bih Lii Chua
184	AGV Path Planning based on Improved Q-learning Optimization	Hao Guo, Min Keng Tan and Kenneth Tze Kin Teo
180	Evolutionary based Control and Optimization of Exothermic Batch Process	Huiyi Xu, Helen Sin Ee Chuo, Min Keng Tan, Chi Huey Ng, Min Yang and Kenneth Tze Kin Teo
178	Autonomous Path Exploration in Unknown Environment Through Deep Reinforcement Learning	Longxin Wei, Kit Guan Lim, Min Keng Tan, Chung Fan Liau, Tianlei Wang and Kenneth Tze Kin Teo

Session B2: Machine Learning in Behavioural Applications

Session Chair: Dr. Lai Po Hung

Paper ID	Paper Title	Authors
43	Driver-Drowsiness Detection System using Deep Learning (CNN)	Firman Ridwan and Po Hung Lai
19	Generating Conversation Opportunity for Elderly People Integrating Agent and Conferencing Service	Hiro Okamoto, Sinan Chen, Masahide Nakamura and Sachio Saiki
174	A Mobile-Based Application for Detecting Sleep Deprivation using Deep Learning for University Student	Florence Sia and Lim Jo Ern
118	Addressing Location Dependency in Human Activity Recognition using Channel State Information via 3D- CWT Approach	Fahd Abuhoureyah, Wong Yan Chiew, Ahmad Sadhiqin Mohd Isira and Joon Huang Chuah
60	Spatial Feature Based Violence Detection Using Convolutional Neural Network	Tirthendu Prosad Chakravorty, Mobashra Abeer, Shaiane Prema Baroi, Sristy Roy and Dewan Ziaul Karim

Session B3: Communication Technology

Session Chair: Dr. Aroland M'conie Jilui Kiring

Paper ID	Paper Title	Authors
5	Design Study of a Frequency Divider Using Injection Locking Technique for RF Communication Transceiver	C. W. Hao, M. S. K. Hemel, M. A. S. Bhuiyan, M. B. I. Reaz, T. A. Almohamad and K. N. Minhad
173	IEEE 802.15.4 Signal Strength Evaluation in an Indoor Environment for Positioning Applications	Mohd Syafiq Daniel Wahab and Aroland Kiring
102	Successive Interference Cancellation Approach to Estimated Outage and Coverage Probability for UDN B5G Network	Faizan Qamar, Anand Gachhadar, Syed Hussain Ali Kazmi and Rosilah Hassan
65	Online Machine Learning Approach to Detect and Mitigate Low-Rate DDoS Attacks in SDN-Based Networks	Abdussalam Alashhab, Mohd Soperi Zahid, Mujaheed Abdullahi and Md Siddikur Rahman

TECHNICAL PROGRAM

Session C1: Smart Building

Session Chair: Associate Professor Ir. Dr. Nurmin Bolong

Paper ID	Paper Title	Authors
42	Concrete Crack Mapping Prediction Formulation Using Stochastic Modelling	Kwong Kok Zee, Lee Foo Wei, Chin Ren Jie, Lim Jee Hock and Chuah Pei Lim
17	Settling Velocity Prediction for Fine Sediment using Generalised Regression Neural Network and Nonlinear Autoregressive Exogenous	Ren Jie Chin, Sai Hin Lai, Lloyd Ling, Ya Qi Yeo, Kar Hui Chan and Wing Son Loh
36	Investigating the Construction Industry Involvement in Smart City Urbanization Development in Malaysia Using PLS-SEM	Wei Heng Ong, Ooi Kuan Tan and Ming Han Lim
88	Tap Settings Optimization in Power Systems: Economic Efficiency Enhancement through Cuckoo Search Algorithm while Ensuring Voltage Stability	Nurul Izzah Raizal, Mohd Helmi Mansor, Ismail Musirin, Sharifah Azwa Shaaya, Saiful Amri Ismail and Nor Laili Ismail
185	Evaluating Energy Efficiency and Sustainability in the Universiti Malaysia Sabah's (UMS) library through 6D Building Information Modelling (BIM)	Nurmin Bolong and Hazler Alebaba

Session C2: Machine Learning Applications

Session Chair: Ts. Dr. Leau Yu Beng

Paper ID	Paper Title	Authors
169	Two-Area Load Frequency Control using Particle Swarm Optimization	Min Keng Tan, Wei Han Lim, Kit Guan Lim, Wei Yeang Kow, Min Sian Ng and Kenneth Tze Kin Teo
170	Improve Perturb and Observe Algorithm with Fuzzy Logic	Min Keng Tan, Braindane Owin Moloney, Kit Guan Lim, Soo Siang Yang, Hui Hwang Goh and Kenneth Tze Kin Teo
44	An On-Call Shift for Anaesthetist Rostering Problem (ARP): A Mathematical Model	Mohamad Norizal Abdullah, Masri Ayob, Nasser Sabar, Lam Meng Chun and Liu Chian Yong
46	Knowledge Base Processing Method Based on Text Classification Algorithm	Baisheng Zhong, Sainin Mohd Shamrie and Soo Fun Tan
56	Integrated Optimization Algorithm in Solving Economic Dispatch Problems	Nor Laili Ismail, Ismail Musirin, Nofri Yenita Dahlan, Mohd Helmi Mansor and A.V. Sentilkumar

Session D1: Pattern Classification for Speech and Text Applications

Session Chair: Associate Professor Dr. Renee Chin

Paper ID	Paper Title	Authors
132	A Hybrid Classification Approach For Artificial Speech Detection	Choon Beng Tan, Mohd. Hanafi Ahmad Hijazi and Puteri Nor Ellyza Nohuddin
38	Preliminary Investigation of Balanced Stratified Reduction (BSR) for Imbalanced Datasets	Mohd Hafiz Zakaria, Jafreezal Jaafar and Said Jadid Abdulkadir
152	Social Media User Engagement for Promoting Public Health: Pattern Analysis Using Apriori Approach	Daimler Benz Alebaba, Suaini Sura, Nooralisa Mohd Tuah and Seungwon Lee
99	Deep Bispectral Analysis of Conversational Speech Towards Emotional Climate Recognition	Ghada Alhussein, Mohanad Alkhodari, Ahsan Khandokher and Leontios Hadjileontiadis

Session D2: Image Processing Applications

Session Chair: Ts. Dr. Lim Kit Guan

Paper ID	Paper Title	Authors
53	A Preliminary Investigation into Use of Jaya Algorithm for Area Segmentation of Large Palm Oil Plantations	Weng Kin Lai, Lek Sheng Koay, Lee Choo Tay and Li Li Lim
124	Sharpe Index based Portfolio Optimization using Computational Intelligence	Ahmed Abbas and Kamran Raza
105	Dual Illumination Image Enhancement using Automated MSRCR and Illumination Estimation	Allysa Kate Brillantes, Edwin Sybingco, Argel Bandala, Robert Kerwin Billones, Alexis Fillone and Elmer Dadios
149	Optimal Band Selection In Hyperspectral Images Using Improved K-Means Clustering With Spectral Similarity Measures	Subhash Chander Goud O, T Hitendra Sarma and C Shoba Bindu

Session E1: Machine Learning in Biomedical Applications

Session Chair: Dr. Rosalyn R. Porle

Paper ID	Paper Title	Authors
39	Cardiovascular Disease Risk in Type 2 Diabetes Mellitus Prediction Model Development using Machine Learning	Ooi Ting Kee, Harmiza Harun, Norlaila Mustafa, Nor Azian Abdul Murad, Siok Fong Chin, Rosmina Jaafar, Hamat Hamdi Che Hassan, Mohd Zubir Suboh and Noraidatulakma Abdullah
130	Enhancing Multi-Stage Classification of Alzheimer's Disease with Attention Mechanism	Pui Ching Wong, Shahrum Shah Abdullah and Mohd Ibrahim Shapiai
159	Unleashing the Power of Machine Learning: Revolutionizing Early Diagnosis and Prevention of Mental Health Disorder	Chhavi Baliyan, Dr Rajesh Dhumal and Dr Ruchi Gupta
145	NayaN: A Multi-view Neural Network Approach to Detect Depression	Sahil Nimsarkar and Rajesh Ingle
100	Improved Machine Learning Algorithm for Heart Disease Prediction Based on Hyperparameter Tuning	Eka Pandu Cynthia, Suzani Binti Mohamad Samuri, Wang Shir Li, Edi Ismanto, Liza Afriyanti and M. Imam Arifandy
32	Enhancing Cancer Classification through the Development of a Fuzzy Gene Selection-Wrapper Plus Method	Mahmood Khalsan, Mu Mu, Eman Salih Al-Shamery, Lee Machado, Michael Opoku Agyeman and Suraj Ajit

Session E2: Internet of Things (IoT)

Session Chair: Ts. Dr. Tan Soo Fun

Paper ID	Paper Title	Authors
154	Internet-of-Things Behavior Monitoring System Based on Wearable Inertial Sensors for Classifying Dairy Cattle Health Using Machine Learning	Zhonghao Shi, Zi'Ang Zhang, Yuanzheng Jia, Jun Li, Xinyue Wang, Yawei Qiu, Jinfeng Miao, Fangyuan Chang, Xianghan Han and Wei Tang
166	Development of Contactless Door Lock System using Text-Dependent Voice Authentication	Ismail Saad, Nurliyana Syahirah Amran, Hazlihan Haris and Min Keng Tan
24	Proposal an Automated Management Service for Hybrid Meeting Spaces Using Uni-messe and IoT	Takeshi Yoshida, Sinan Chen, Masahide Nakamura and Sachio Saiki
110	Delay Optimization of IoT-Edge Computing in Smart Grid using Deep Reinforcement Learning	Fauzun Asuhaimi, Muhammad Akmal Jafri, Ahmad Fikri Dahari and Mohd Khairil Mohd Hatta
41	A Smartphone-Based IoT System to Monitor Driving Behaviors by Using a Machine Learning Classifier	Chi-Chung Cheung, Chun-Ming Cheung and Chi-Wang Tong

Session F1: Machine Learning Applications

Session Chair: Dr. Mazlina Mamat

Paper ID	Paper Title	Authors
172	Multi-Step API Prediction in Malaysia: Evaluating Recursive NARX Neural Network and Recursive SVM Models	Rosminah Mustakim, Mazlina Mamat, Hoe Tung Yew and Farrah Wong
30	Optimization of a Deep Learning Model for E. coli Detection based on Annotation Strategies	Khairul Firdaus Mohd Talib, Muhamad Syahmi Johar, Jia Xin Yap, Choe Peng Leo, Kok Hwa Yu and Kin Sam Yen
156	Supporting Financial Inclusion with Digital Financial Services: Comparative Analysis of Machine Learning Models	Hui Shan Lee, Kee Seng Kuang, Ping Xin Liew, Wai Mun Har and Choon Wei Low
129	The Development of Simultaneous Congkak Game with Intelligent Agents	Nik Abdul Muhaimin Nik Ahmad Fazlan and Tan Chye Cheah

Session F2: Modelling and Simulation

Session Chair: Dr. Helen Chuo Sin Ee

Paper ID	Paper Title	Authors
179	Simulation and Batch Modelling of Microbial Biosurfactant Production	Helen Sin Ee Chuo, Andy Raymond Ramlan, Kit Guan Lim, Min Keng Tan, Hou Pin Yoong and Kenneth Tze Kin Teo
139	Accuracy Improvement of Object Detection in VVC Coded Video Using YOLO-v7 Features	Takahiro Shindo, Taiju Watanabe, Kein Yamada and Hiroshi Watanabe
29	Saturation Degree-based Constructive Heuristic for Master Surgery Scheduling Problem	Mohamad Khairulaminir Md Razali, Abdul Hadi Abd Rahman, Masri Ayob, Razman Jarmin, Chian Yong Liu, Muhammad Maaya, Azarinah Izaham and Raha Abdul Rahman
111	Blockchain-based Anti-Counterfeit Product Identification System	Yen Xuan Lo and Tan Chye Cheah

Session G1: Image and Signal Processing

Session Chair: Dr. Sainarayanan Gopalakrishnan

Paper ID	Paper Title	Authors
182	IoT-based Multi-Level Sensors Electromyography (EMG) Acquisition System	Mohammad Shafiq Heiqal Bacho, Ismail Saad, Fatimah Ahmedy, Mohammad Saffree Jeffree, Nurmin Bolong, Kit Guan Lim and Kenneth Tze Kin Teo
48	U-Net Segmentation of Ultra-Widefield Retinal Fundus Images for Retinal Vein Occlusion Associated Lesion Recognition	Ivy Siaw Yin Ong, Lik Thai Lim, Muhammad Hamdi Mahmood and Nung Kion Lee
57	Features Extraction Technique Analysis of EEG Signal for Motor Imagery Classification	Fouziah Md Yassin, Norita Md Norwawi, Nor Azila Noh, Afishah Alias and Sofina Tamam
165	Semi Supervised Anomaly Detection using PatchCore Auto Encoder	Abhishek P G, Deepan Raj M and Sainarayanan Gopalakrishnan

Session G2: Smart Energy

Session Chair: Ts. Dr. Tan Min Keng

Paper ID	Paper Title	Authors
113	Energy Efficiency of IoT-Edge Computing in Smart Grid using Deep Reinforcement Learning	Fauzun Abdullah Asuhaimi, Ahmad Fikri Dahari, Muhammad Akmal Jafri and Mohd Khairil Mohd Hatta
181	Minimizing Energy Expenditures in Multi-Hop Transmissions with Genetic Algorithm	Kit Guan Lim, Qi Yang Chin, Min Keng Tan, Ali Farzamnia, Longxin Wei and Kenneth Tze Kin Teo
186	Development of a Flexible Rogowski Coil Sensor for Partial Discharge Detection in Power Cables	Kui Fern Chin, Chang Yii Chai, Ismail Saad, Asfarina Abu Bakar, Megat Muhammad Ikhsan Megat Hasnan and Lily Yong
168	Optimisation of Photovoltaic Energy Harvesting using Clonal Selection Algorithm	Min Keng Tan, Grace Butiza Joponi, Kit Guan Lim, Ahmad Razani Haron, Chang Yii Chai and Kenneth Tze Kin Teo