DETAILED PROGRAM

Last Updated 27-Nov-2020

ALL TIMES in AEDT (UTC+11)

Please note in the conversion table below that some of the times listed below are on the previous day.

AEDT	7:00:00 AM	8:00:00 AM	9:00:00 AM	10:00:00 AM	11:00:00 AM	7:00:00 PM	7:00:00 PM	8:00:00 PM	9:00:00 PM	10:00:00 PM	11:00:00 PM
GMT	9:00:00 PM	10:00:00 PM	11:00:00 PM	12:00:00 AM	1:00:00 AM	9:00:00 AM	9:00:00 AM	10:00:00 AM	11:00:00 AM	12:00:00 PM	1:00:00 PM
Beijing	4:00:00 AM	5:00:00 AM	6:00:00 AM	7:00:00 AM	8:00:00 AM	4:00:00 PM	4:00:00 PM	5:00:00 PM	6:00:00 PM	7:00:00 PM	8:00:00 PM
Paris	9:00:00 PM	10:00:00 PM	11:00:00 PM	12:00:00 AM	1:00:00 AM	9:00:00 AM	9:00:00 AM	10:00:00 AM	11:00:00 AM	12:00:00 PM	1:00:00 PM
London	8:00:00 PM	9:00:00 PM	10:00:00 PM	11:00:00 PM	12:00:00 AM	8:00:00 AM	8:00:00 AM	9:00:00 AM	10:00:00 AM	11:00:00 AM	12:00:00 PM
Mexico	3:00:00 PM	4:00:00 PM	5:00:00 PM	6:00:00 PM	7:00:00 PM	3:00:00 AM	3:00:00 AM	4:00:00 AM	5:00:00 AM	6:00:00 AM	7:00:00 AM
New York	4:00:00 PM	5:00:00 PM	6:00:00 PM	7:00:00 PM	8:00:00 PM	4:00:00 AM	4:00:00 AM	5:00:00 AM	6:00:00 AM	7:00:00 AM	8:00:00 AM
San Francisco	1:00:00 PM	2:00:00 PM	3:00:00 PM	4:00:00 PM	5:00:00 PM	1:00:00 AM	1:00:00 AM	2:00:00 AM	3:00:00 AM	4:00:00 AM	5:00:00 AM

Tuesday, December 1, 7:00AM-10:06AM

Tutorial: Deep Learning 1.0 and Beyond, Instructor: Truyen Tran: Room 1

Tutorial: Artificial Intelligence-based Uncertainty Qualification: Importance, Challenges and Solutions, Instructor: Abbas Khosravi and Saeid Nahavandi: Room 2

Tutorial: Handling Data Streams in Continual and Rapidly Changing Environments, Instructor: Mahardhika Pratama: Room 3

Special Session: IEEE-CIS 2nd Technical Challenge On Energy Prediction From Smart Meter Data

7.01 AM: Welcome (Luis) – 5 minutes

7.05 AM: Introduction to the 2nd Challenge and summary of results (Isaac) – 15 mins

7.20 AM: Presentations – 12 min presentation + Questions (5 min) + 3 min switch to next speaker.

7.20AM – 7.37AM: Kasun Bandara

7.40AM – 7.57AM: Jesus Lago

8.00AM – 8.17AM: Steffen Limmer

8.20AM – 8.37AM: Alexander Dokumentov

8.40AM – 8.57AM: Sven Rebhan

9.00AM – 9.17AM: Wenlong Wu

9.20AM – 9.30AM: Closing – 5 mins

Tuesday, December 1, 7:00PM-10:00PM

Tutorial: Tensor for Machine Learning, Instructor: Yipeng Liu: Room 1

Tutorial: Artificial Intelligence using Neural Networks: From Perceptron to Deep Neural Networks, Instructor: Radhakant Padhi: Room 2

Tutorial: Insight into Fuzzy Modeling Techniques for Data Analysis, Instructor: Irina Perfilieva and Vilem Novak: Room 3

Tutorial: Ethical Challenges and Opportunities within Computational Intelligence Systems Development, Instructor: Jim Torresen: Room 4

Wednesday, December 2, 6:45AM-7:00AM

Opening Session

Prof. Hussein Abbass

Prof. Bernadette Bouchon-Meunier

Prof. Scott Tyo

Prof. Carlos A. Coello Coello

Wednesday, December 2, 7:00AM-8:00AM

Plenary Speaker: Natural and Artificial Adversarial Intelligence, Una-May O'Reilly, MIT; Session Chair: Prof. Carlos A. Coello Coello

Wednesday, December 2, 8:00AM-8:36AM

CIFEr1: Machine Learning in Finance/Economics/Business, Chair: Ruppa Thulasiram, Room: Room 1

8:00AM *Global Adaptive Input Normalization for Short-Term Electric Load Forecasting*
Nikolaos Passalis and Anastasios Tefas

8:06AM *A rapidly updating stratified mix-adjusted median property price index model*
Robert Miller and Phil Maguire

8:12AM *Towards Responsible AI for Financial Transactions*
Charl Maree, Jan Erik Modal and Christian W. Omlin

8:18AM *Revisiting Determinants of Investor Sentiment in the FX Option Market by Machine Learning Approaches*
Kazuaki Washimi

8:24AM *Regularized Probabilistic Forecasting of Electricity Wholesale Price and Demand*
Behrouz Banitalebi, Md. Erfanul Hoque, Appadoo Srimantoorao S. and Aerambamoorthy Thavaneswaran

8:30AM *Covariance in Ordered Weighted Logarithm Aggregation Operators*
Miriam E. Perez-Romero, Victor G. Alfaro-Garcia, Jose M. Merigo and Martha B. Flores-Romero

AusDMApp1:Data Mining, Chair: Dat Tran, Room: Room 2

8:00AM *DeepHealth: Deep Representation Learning with Autoencoders for Healthcare Prediction*
Wen Xu, Jing He and Yanfeng Shu

8:06AM *Hospital readmission prediction using discriminative patterns*
Sea Jung Im, Yue Xu, Jason Watson, Ann Bonner, Helen Healy and Wendy Hoy

8:12AM *Application of Deep Learning in Automated Meal Recognition*
Jiaxiang Mao, Dat Tran, Wanli Ma, Nenad Naumovski, Jane Kellett, Elisa Martinez-marroquin and Andrew Slattery

8:18AM *Biogeographical Ancestry Inference from Genotype: A Comparison of Ancestral Informative SNPs and Genome-wide SNPs*
Yue Qu, Dat Tran and Elisa Martinez-marroquin

8:24AM *Two-stage Unsupervised Approach for Combating Social Spammers*
Darshika Koggalahewa, Yue Xu and Ernest Foo

8:30AM *A Study on the Impact of Alcoholism on EEG-based Cryptographic Key Generation Systems*
Dang Nguyen, Dat Tran and Dharmendra Sharma

ALIFE1: Self-organization and complex adaptive systems, Chair: Joseph Lizier, Room: Room 3

8:00AM *Perspectives of Final Year Students on Modeling and Analysis of Complex Systems and Their Properties*
Claudia Szabo

8:06AM *Beneficial Catastrophes: Leveraging Abiotic Constraints through Environment-Driven Evolutionary Selection*
Kevin Godin-Dubois, Sylvain Cussat-Blanc and Yves Duthen

8:12AM *Quantifying Sustainability in a System of Coupled Tipping Elements*
Jan T Kim and Daniel Polani

8:18AM *Teams Frightened of Failure Fail More: Modelling Reward Sensitivity in Teamwork*
Siyuan Guo, Soo Ling Lim and Peter Bentley

8:24AM *On the Use of Predation to Shape Evolutionary Computation*
Felipe Andrade, Claus Aranha and Ricardo Torres

8:30AM *A Simple 3D-Only Evolutionary Bipedal System with Albatross Morphology for Increased Performance*
Ben Jackson and Alastair Channon

MCDM, Chair: Sanaz Mostaghim Hemant Singh, Room: Room 4

8:00AM *Interactively Learning the Preferences of a Decision Maker in Multi-objective Optimization Utilizing Belief-rules*
Giovanni Misitano

8:06AM *Exploiting the Trade-off between Convergence and Diversity Indicators*
Jesus Guillermo Falcon-Cardona, Hisao Ishibuchi and Carlos Artemio Coello Coello

8:12AM *Semantic-based Distance Approaches in Multi-objective Genetic Programming*
Edgar Galvan and Fergal Stapleton

8:18AM *Transformation-based Hypervolume Indicator: A Framework for Designing Hypervolume Variants*
Ke Shang, Hisao Ishibuchi, Yang Nan and Weiyu Chen

8:24AM *Edge-Rotated Cone Orders in Multi-objective Evolutionary Algorithms for Improved Convergence and Preference Articulation*
Yali Wang, Andre Deutz, Thomas Baeck and Michael Emmerich

8:30AM *Finding Influential Variables in Multi-Objective Optimization Problems*
Henrik Smedberg and Sunith Bandaru

CIIoT1: Internet of Things, Chair: Amir H. Gandomi Mohammad S. Khan, Room: Room 5

8:00AM *Multi-Objective Task Allocation for Wireless Sensor Networks*
Dominik Weikert, Christoph Steup and Sanaz Mostaghim

8:06AM *Towards a semantic model for IoT-based seismic event detection and classification*
Diego Rincon-Yanez, Enza De Lauro, MariaRosaria Falanga, Sabrina Senatore and Simona Petrosino

8:12AM *Classification of Indoor Environments Based on Mixed Graph Similarity using UWB Signals*
Guohun Zhu, Fangyan Dong and Pang Nini

8:18AM *Machine Learning Inspired Hyperparameter Uncertainty Max-info-Gain Entropy-based Secure Storage Distribution*
Chandrasegar Thirumallai, Viswanathan Perumal, Ms Mekala, Rizwan Patan and Amir H. Gandomi

8:24AM *An Interpretable Deep Learning Framework for Health Monitoring Systems: A Case Study of Eye State Detection using EEG Signals*
Amirhessam Tahmassebi, Jennifer Martin, Anke Meyer-Baese and Amir H. Gandomi

8:30AM *Energy-Efficient Cluster-based Routing Protocol in Internet of Things using Swarm Intelligence*
S. Sankar, Somula Ramasubbareddy, Fang Chen and Amir H. Gandomi

ADPRL1: New or Improved Algorithms, Chair: Yanhong Luo Zeng-Guang Hou, Room: Room 6

8:00AM *HIGhER : Improving instruction following with Hindsight Generation for Experience Replay*
Geoffrey Cideron, Mathieu Seurin, Florian Strub and Olivier Pietquin

8:06AM *Finite-time Adaptive Optimal Output Feedback Control of Linear Systems with Intermittent Feedback*
Avimanyu Sahoo, Vignesh Narayanan and Qiming Zhao

8:12AM *Revisiting Maximum Entropy Inverse Reinforcement Learning: New Perspectives and Algorithms*
Aaron J. Snoswell, Surya P. N. Singh and Nan Ye

8:18AM *A3DQN: Adaptive Anderson Acceleration for Deep Q-Networks*
Melike Ermis and Insoon Yang

8:24AM *Geometric deep reinforcement learning for dynamic DAG scheduling*
Nathan Grinsztajn, Olivier Beaumont, Emmanuel Jeannot and Philippe Preux

8:30AM *The True Online Continuous Learning Automation (TOCLA) in a continuous control benchmarking of actor-critic algorithms*
Gordon Frost and Marta Vallejo

CIDUE1: Evolutionary Computation in Dynamic and Uncertain Environments, Chair: Michalis Mavrovouniotis, Room: Room 7

8:00AM *Many-to-Many Path Planning for Emergency Material Transportation in Dynamic Environment*
Xiang-Zhi Meng, Hang Zhou and Xiao-Bing Hu

8:06AM *A Ripple Spreading Algorithm for Free-Flight Route Optimization in Dynamical Airspace*
Hang Zhou and Xiao-Bing Hu

8:12AM *Using Neural Networks and Diversifying Differential Evolution for Dynamic Optimisation*
Maryam Hasani Shoreh, Renato Hermoza Aragones and Frank Neumann

8:18AM *Responsive Multi-population Models for the Dynamic Travelling Thief Problem*
Daniel Herring, Michael Kirley and Xin Yao

8:24AM *A Competitive Co-evolutionary Optimization Method for the Dynamic Vehicle Routing Problem*
Xiaofen Lu, Ke Tang, Stefan Menzel and Xin Yao

8:30AM *Ant Colony Optimization with Heuristic Repair for the Dynamic Vehicle Routing Problem*
Iae Bonilha, Michalis Mavrovouniotis, Felipe Muller, Georgios Ellinas and Marios Polycarpou

SDE: Theory/Comparisons with other Methods/Multi-Objective and Constrained Optimizatio/Self-Adaptation, Chair: Kenneth V. Price Rammohan Mallipeddi, Room: Room 8

8:00AM *Visualizing Parameter Adaptation in Differential Evolution with Expected Fitness Improvement*
Vladimir Stanovov, Shakhnaz Akhmedova and Eugene Semenkin

8:06AM *A Smart Scheme for Variable Selection in Partial Opposition-based Differential Evolution*
Bradley Wood, Viraj Patel and Shahryar Rahnamayan

8:12AM *Enhancing SHADE and L-SHADE Algorithms Using Ordered Mutation*
Seyed Jalaleddin Mousavirad and Shahryar Rahnamayan

8:18AM *Large-scale clustering using decomposition-based evolutionary algorithms*
Aleksei Vakhnin and Evgenii Sopov

8:24AM *Evoluationary Search from the Interior of Feasible Space*
Noha Hamza, Ruhul Sarker and Daryl Essam

8:30AM *Reinforced Online Parameter Adaptation Method for Population-based Metaheuristics*
Vasileios Tatsis and Konstantinos Parsopoulos

Wednesday, December 2, 8:48AM-9:24AM

CIFEr2: Machine Learning in Finance/Economics/Business & Agent-Based Modelling and Simulation, Chair: Adam Ghandar, Room: Room 1

8:48AM *Pair Trading with an Ontology of SEC Financial Reports*
Can Erten, Neel Chotai and Dimitar Kazakov

8:54AM *Data-Driven Neuro ARCH (DDNA) volatility for Option Pricing on Cloud Resources*
Manmohit Singh, Ruppa K. Thulasiram and Aerambamoorthy Thavaneswaran

9:00AM *Evolving Neural Networks for Prediction with Negative Correlation Search: Application in Consumer Demand Forecasting*
Yichen Zhu, Yang Chen and Ghandar Adam

9:06AM *Methods Matter: A Trading Agent with No Intelligence Routinely Outperforms AI-Based Traders*
Dave Cliff and Michael Rollins

9:12AM *An agent-based model for designing a financial market that works well*
Takanobu Mizuta

9:18AM *Can an AI perform market manipulation at its own discretion? - A genetic algorithm learns in an artificial market simulation -*
Takanobu Mizuta

CIHLI: Computational Intelligence for Human-Like Intelligence, Chair: Marcin Wozniak Jacek Mandziuk, Room: Room 2

8:48AM *Towards a human-like movements generator based on environmental features*
Alessandro Zonta, S. K. Smit and A. E Eiben

8:54AM *Investigation of a Human's Opinion Affected by Social Influence of a Group Norm in a Human-Robot Group After a Human-Robot Scenario*
Yotaro Fuse and Masataka Tokumaru

9:00AM *A Bilingual Cognitive Robot that Learns like a Toddler*
Ioanna Giorgi, Angelo Cangelosi and Giovanni Masala L

9:06AM *Collaborative learning with taboos for machine learning methods in big data problems*
Dawid Polap and Marcin Wozniak

9:12AM *Actional-Perceptual Causality: Concepts and Inductive Learning for AI and Robotics*
Seng-Beng Ho, Mark Edmonds and Song-Chun Zhu

9:18AM *Achieving Human Expert Level Time Performance for Atari Games - A Causal Learning Approach*
Seng-Beng Ho, Xiwen Yang and Therese Quieta

SIS1:Bio-inspired Swarm Intelligence Algorithms/Swarm Robotics, Chair: Sanaz Mostaghim Yuhui Shi, Room: Room 3

8:48AM *BIS: A New Swarm-Based Optimisation Algorithm*
Fevzi Tugrul Varna and Phil Husbands

8:54AM *UAV path planning in the presence of static and dynamic obstacles*
Soheila Ghambari, Julien Lepagnot, Laetitia Jourdan and Lhassane Idoumghar

9:00AM *HIDMS-PSO: A New Heterogeneous Improved Dynamic Multi-Swarm PSO Algorithm*
Fevzi Tugrul Varna and Phil Husbands

9:06AM *PSO Trajectory Planner Using Kinematic Controllers that Ensure Smooth Differential Robot Velocities*
Aldo Aguilar, Miguel Zea and Luis Alberto Rivera

9:12AM *Automating the Design of Efficient Distributed Behaviours for a Swarm of UAVs*
Gabriel Duflo, Gregoire Danoy, El-Ghazali Talbi and Pascal Bouvry

9:18AM *Impact of Communication Topology on PSO-based Swarms in Vector Fields*
Palina Bartashevich, Doreen Koerte and Sanaz Mostaghim

CICARE1: (Bio-, health-, medical-, neuro-)informatics and decision support systems/Assistive Technologies/Applications to Healthcare, Chair: Mufti Mahmud, Room: Room 4

8:48AM *Multichannel Symbolic Aggregate Approximation Intelligent Icons: Application for Activity Recognition*
Lamprini Pappa, Petros Karvelis, George Georgoulas and Chrysostomos Stylios

8:54AM *Predictive Modeling of Sports-Related Concussions using Clinical Assessment Metrics*
Sujit Subhash, Tayo Obafemi-Ajayi, Dennis Goodman, Donald Wunsch II and Gayla Olbricht

9:00AM *Towards a Data-Driven Fuzzy-Geospatial Pandemic Modelling*
Amir Pourabdollah and Ahmad Lotfi

9:06AM *Who is physically active? : Classification and Analysis of Physical Activity using NHANES data*
U Khyoi Nu, Tahar Touati, Srushti Buddhadev, Ruopeng Sun, Matthew Smuck and Isabel Hyo Jung Song

9:12AM *Towards the Development of an Adaptive System for Detecting Anomaly in Human Activities*
Salisu Wada Yahaya, Ahmad Lotfi and Mufti Mahmud

9:18AM *Early Prediction of Hemoglobin A1c: A novel Framework for better Diabetes Management*
Md shafiqul Islam, Marwa Qaraqe and Samir Belhaouari

CIBCI: Computational Intelligence for BCI Signal Processing/BCI Pattern Recognition/Emerging BCI Applications, Chair: Anirban Chowdhury Javier Andreu-Perez, Room: Room 5

8:48AM *Towards Decoding of Depersonalisation Disorder Using EEG: A Time Series Analysis Using CDTW*
Abbas Salami, Javier Andreu-Perez and Helge Gillmeister

8:54AM *Lifelike Neuromorphic Learning Networks (LNLN)*
Aishwarya Asesh

9:00AM *An SSVEP Stimuli Design using Real-time Camera View with Object Recognition*
Chen Shih-Kang, Chen Chin-Sheng, Wang Yu-Kai and Lin Chin-Teng

9:06AM *Estimating the cognitive load in physical spatial navigation*
Tien-Thong Do, Avinash Singh, Carlos Tirado Cortes and Chin-Teng Lin

9:12AM *Improving Speller BCI performance using a cluster-based under-sampling method*
Sergio Cortez, Christian Flores and Javier Andreu-Perez

9:18AM *BCINet: An Optimized Convolutional Neural Network for EEG-Based Brain-Computer Interface Applications*
Avinash Kumar Singh and Xiao Tao

EDAC1I: Neural Network Learning Models/Dimensionality Reduction and Analysis of Large and Complex Data, Chair: Jian Wang, Room: Room 6

8:48AM *Asymmetric Dual Possibilistic Regression Model by using Pairing nu Support Vector Networks*
Pei-Yi Hap

8:54AM *A hybrid Prophet-LSTM Model for Prediction of Air Quality Index*
Landi Zhou, Ming Chen and Qingjian Ni

9:00AM *Action Detection Based on 3D Convolution Neural Network with Channel Attention Mechanism*
Yan Gao, Huilai Liang, Baodi Liu and Yanjiang Wang

9:06AM *Inpainting Electrical Logging Images Based on Deep CNN with Attention Mechanisms*
Chunyu Du, Qiang Xing, Jinyan Zhang, Jun Wang, Baodi Liu and Yanjiang Wang

9:12AM *Efficient decomposition of latent representation in generative models*
Vsevolod Nikulin and Jun Tani

9:18AM *A Novel Genetic Algorithm Approach to Simultaneous Feature Selection and Instance Selection*
Inti Albuquerque, Bach Nguyen, Bing Xue and Mengjie Zhang

CIMD1: Machine Learning, Chair: Zhen Ni Gregory Ditzler, Room: Room 7

8:48AM *Multi-objective Evolutionary Top Rank Optimization with Pareto Ensemble*
Kai Wu and JIng Liu

8:54AM *Genens: An AutoML System for Ensemble Optimization Based on Developmental Genetic Programming*
Gabriela Suchoparova and Roman Neruda

9:00AM *Adversarial Audio Attacks that Evade Temporal Dependency*
Heng Liu and Gregory Ditzler

9:06AM *Zero-error rule induction using a memetic algorithm*
Ajit Narayanan, Kostya Ross and Kenneth Johnson

9:12AM *Integrating Decision Trees with Metaheuristic Search Optimization Algorithm for a Student's Performance Prediction*
Stuti Shekhar, Kaustubh Karthikey and Arti Arya

9:18AM *On Obtaining Classification Confidence, Ranked Predictions and AUC with Tsetlin Machines*
Kuruge Darshana Abeyrathna, Ole-Christoffer Granmo and Morten Goodwin

HMI: Collaborative Decision Making/Human and AI/Uncertainty, Chair: Uwe Aickelin Hadi Khorshidi, Room: Room 8

8:48AM *Taxonomy and Survey of Interpretable Machine Learning Method*
Saikat Das, Namita Agarwal, Deepak Venugopal, Frederick T. Sheldon and Sajjan Shiva

8:54AM *Human Interactive EEG-Based Evolutionary Image Animation*
Aneta Neumann and Frank Neumann

9:00AM *Monte Carlo Tree Search player for Mai- Star and Balance Evaluation*
Egor Klementev, Arina Fedorovskaya, Farhad Hakimov, Hamna Aslam and Joseph Alexander Brown

9:06AM *An interval-based aggregation approach based on Bagging and Interval Agreement Approach in ensemble learning*
Mansoureh Maadi, Uwe Aickelin and Hadi Akbarzadeh Khorshidi

9:12AM *Detection of driver maneuvers using evolving fuzzy cloud-based system*
Goran Andonovski, Oscar Sipele, Jose Antonio Iglesias, Araceli Sanchis, Edwin Lughofer and Igor Skrjanc

9:18AM *Efficient-Frequency: a hybrid visual forensic framework for facial forgery detection*
Xuan Truong Du Chau, Hoang Duong Le, Thanh Trung Huynh, Minh Tam Pham, Quoc Viet Hung Nguyen and Jun Jo

Wednesday, December 2, 9:36AM-10:12AM

DL1: Learning and Implementation issues, Chair: Alessandro Sperduti, Room: Room 1

9:36AM *Wind speed prediction using multidimensional convolutional neural networks*
Kevin Trebing and Siamak Mehrkanoon

9:42AM *Distributed Evolution Strategies Using TPUs for Meta-Learning*
Alex Sheng and Jun Yi He

9:48AM *Conditional Constrained Graph Variational Autoencoders for Molecule Design*
Davide Rigoni, Nicolo' Navarin and Alessandro Sperduti

9:54AM *Sim-to-Real Transfer in Deep Reinforcement Learning for Robotics: a Survey*
Wenshuai Zhao, Jorge Pena Queralta and Tomi Westerlund

10:00AM *Optimizing Agent Training with Deep Q-Learning on a Self-Driving Reinforcement Learning Environment*
Pedro Rodrigues and Susana Vieira

10:06AM *Composition of Saliency Metrics for Pruning with a Myopic Oracle*
Kaveena Persand, Andrew Anderson and David Gregg

NICE1: Nature-Inspired Computation in Engineering, Chair: Joao Paulo Papa Xin-She Yang, Room: Room 2

9:36AM *A Comparative Evaluation of Population-based Optimization Algorithms for Workflow Scheduling in Cloud-Fog Environments*
Subramoney Dineshan and Nyirenda Clement

9:42AM *A Coevolutionary Variable Neighborhood Search Algorithm for Discrete Multitasking (CoVNS): Application to Community Detection over Graphs*
Osaba Eneko, Villar Esther and Del Ser Javier

9:48AM *Linear Matrix Factorization Embeddings for Single-objective Optimization Landscapes*
Tome Eftimov, Gorjan Popovski, Quentin Renau, Peter Korosec and Carola Doerr

9:54AM *Simple generate-evaluate strategy for tight-budget parameter tuning problems*
Ivars Dzalbs and Tatiana Kalganova

10:00AM *A User-Preference Driven Lexicographic Approachfor Multi-Objective Distributed Web Service Composition*
Soheila Sadeghiram, Hui Ma and Gang Chen

10:06AM *A Braess's Paradox Inspired Method for Enhancing the Robustness of Air Traffic Networks*
Qing Cai, Sameer Alam, Hao Jie Ang and Duong Vu

CIEL: Ensemble of Classifiers/Evolutionary Algorithms/Hybrids/Applications, Chair: Xin Yao Ponnuthurai Nagaratnam Suganthan, Room: Room 3

9:36AM *A New Random Forest Method for Longitudinal Data Classification Using a Lexicographic Bi-Objective Approach*
Caio Ribeiro and Alex Freitas

9:42AM *Composing Algorithm Portfolio with Problem Set of Unknown Distribution*
Wenwen Liu, Shiu Yin Yuen and Chi Wan Sung

9:48AM *Discovering Action Regions for Solving the Bin Packing Problem through Hyper-heuristics*
Arturo Silva-Galvez, Jorge Orozco-Sanchez, Erick Lara-Cardenas, Jose Carlos Ortiz-Bayliss, Ivan Amaya, Jorge M. Cruz-Duarte and Hugo Terashima-Marin

9:54AM *Network Intrusion Detection using Natural Language Processing and Ensemble Machine Learning*
Saikat Das, Mohammad Ashrafuzzaman, Frederick T. Sheldon and Sajjan Shiva

10:00AM *Epileptic Seizure Recognition: Deep Neural Network Ensemble versus Choquet Fuzzy Integral Fusion*
Simone Ludwig

10:06AM *Failure Modeling in a Gas Turbine System: Combining Classification with Anomaly Detection Models for Two Data Selection Strategies*
Catherine Cheung, Davis To and Julio Valdes

CICA1: Control and Decision/System Control and Identification/Applications of Control and Automation, Chair: Xiao-Jun Zeng Daoyi Dong, Room: Room 4

9:36AM *Robust Model Predictive Longitudinal Position Tracking Control for an Autonomous Vehicle Based on Multiple Models*
Andre Kempf, Markus Herrmann-Wicklmayr and Steffen Mueller

9:42AM *Design of Work Ticket System and Scheduling Algorithm based on Blockchain*
Wang Hongkai, Yang Yiyao, Hou Qitong, Wang Xiaoyi, Zeng Lei, Qiu Weiwei, He Dong and Wang Qiang

9:48AM *PSO-assisted Lyapunov control design for quantum systems*
Xiaoke Guan, Sen Kuang and Daoyi Dong

9:54AM *Industrial Process Fault Detection Using Singular Spectrum Analysis and Kernel Principal Component Analysis*
Syamala Krishnannair

10:00AM *Design of a Linear Quantum Projection Filter*
Peng Zhang, Qing Gao, Jinhu Lv and Daoyi Dong

10:06AM *Voltage-Violation Mitigation in Power System Networks With Photo-Voltaic Penetration*
Mubeenah Titilola Sanni, Hemanshu Pota, Huadong Mo and Daoyi Dong

FASLIP1: Feature Selection/Image Analysis, Chair: Qi Chen Bing Xue, Room: Room 5

9:36AM *Driver Drowsiness Classification Based on Eye Blink and Head Movement Features Using the k-NN Algorithm*
Mariella Dreissig, Mohamed Hedi Baccour, Tim Schaeck and Enkelejda Kasneci

9:42AM *Improved Bianry Particle Swarm Optimization with Evolutionary Population Dynamic for Key Oncogene Selection*
Wenxin Zhao, Yanan Sun and Bing Xue

9:48AM *GP-based Feature Selection and Weighted KNN-based Instance Selection for Symbolic Regression with Incomplete Data*
Baligh Al-Helali, Qi Chen, Bing Xue and Mengjie Zhang

9:54AM *Evolutionary Algorithm Driven Explainable Adversarial Artificial Intelligence*
Charlie Veal, Marshall Lindsay, Scott D. Kovaleski, Derek T. Anderson and Stanton R. Price

10:00AM *A neural network approach to predicting viability of native seeds from their optic RGB images*
Camilo Franco, Mateo Marulanda, Adriana Cruz, Orlando Morales, Luz Stella Fuentes and Viviana Rubiano

10:06AM *Boosting Rare Benthic Macroinvertebrates Taxa Identification With One-Class Classification*
Fahad Sohrab and Jenni Raitoharju

CIES:Complex Engineering Systems, Structures and Processes/Intelligent Analysis, Control and Decision-Making, Chair: Vladik Kreinovich, Room: Room 6

9:36AM *An Effective Measure to Identify Meaningful Concepts in Engineering Design Optimization*
Felix Lanfermann, Sebastian Schmitt and Stefan Menzel

9:42AM *Back To Meshes: Optimal Simulation-ready Mesh Prototypes For Autoencoder-based 3D Car Point Clouds*
Thiago Rios, Jiawen Kong, Bas van Stein, Thomas Baeck, Patricia Wollstadt, Bernhard Sendhoff and Stefan Menzel

9:48AM *Multi-stage Multi-fidelity Information Correction for Artificial Neural Network Based Meta-modelling*
Ben Parsonage and Christie Alisa Maddock

9:54AM *Scale-Invariance Ideas Explain the Empirical Soil-Water Characteristic Curve*
Edgar Daniel Rodriguez Velasquez and Vladik Kreinovich

10:00AM *What Is the Optimal Annealing Schedule in Quantum Annealing*
Oscar Galindo and Vladik Kreinovich

10:06AM *Weighted Failure Probability Calculation of Overhead Distribution Line in Random Wind Field*
Zhiwei Zhang, Hui Hou, Min Li, Yufeng Xie, Ling Zhu and Yong Huang

SCM: Cooperative Algorithms, Chair: Mohammed El-Abd Seyedali Mirjalili, Room: Room 7

9:36AM *Island-based Modified Harmony Search Algorithm with Neighboring Heuristics Methods for Flow Shop Scheduling with Blocking*
Iyad Abu Doush, Mohammed Azmi Al-Betar, Mohammed Awadallah, Abdelaziz Hammouri and Mohammed El-Abd

9:42AM *Comparative Evaluation of Dependability for Voltage and Reactive Power Control by Modified Brain Storm Optimization using Individual and Sub-population based Parallel Multi-Population*
Kaichi Matsumoto and Yoshikazu Fukuyama

9:48AM *Fake-Face Image Classification using Improved Quantum-Inspired Evolutionary-based Feature Selection Method*
Himanshu Mittal, Mukesh Saraswat, Jagdish Bansal and Atulya Nagar

9:54AM *Per-Instance Configuration of the Modularized CMA-ES by Means of Classifier Chains and Exploratory Landscape Analysis*
Raphael Patrick Prager, Heike Trautmann, Hao Wang, Thomas H. W. Baeck and Pascal Kerschke

10:00AM *Genetic Programming Multitasking*
Ahmed Kattan, Doctor Faiyaz, Yew-Soon Ong and Alexandros Agapitos

10:06AM *Search Progress Dependent Parent Selection for Avoiding Evaluation Time Bias in Asynchronous Parallel Multi-Objective Evolutionary Algorithms*
Harada Tomohiro

AusDMRes1: Data Stream Mining & Spatial and Temporal Data Mining, Chair: Yue Xu Mohammad Abualsheikh, Room: Room 8

9:36AM *Statistical Tests Ensemble Drift Detector*
Jose Luis Perez, Roberto Barros and Silas Santos

9:42AM *A Change Detector for Prior Probabilities of Classes*
Paulo Mauricio Goncalves Jr., Roberto Souto Maior de Barros and Sylvain Chartier

9:48AM *EMZD: Equal Means Z-Test Concept Drift Detector*
Danilo Rafael Cabral and Roberto Barros

9:54AM *k-means on Positive Definite Matrices, and an Application to Clustering in Radar Image Sequences*
Daniel Fryer, Hien Nguyen and Pascal Castellazzi

10:00AM *Clustering of Time Series Regarding Their Over-Time Stability*
Gerhard Klassen, Martha Tatusch and Stefan Conrad

10:06AM *Unsupervised Anomaly Detection on Temporal Multiway Data*
Duc Nguyen, Phuoc Nguyen, Kien Do, Santu Rana, Sunil Gupta and Truyen Tran

Wednesday, December 2, 7:00PM-9:00PM

Panel Session: The Ethical, Social and Legal Implications of Artificial Intelligence, Chair: Ambarish Natu, Room: Room 1

Panellists: Ambarish Natu, Sean Goltz, Ali Hessami, Keeley Crockett, Jai Galliot, Liesl Yearsley, Matt Garratt

Thursday, December 3, 7:00AM-8:00AM

Plenary Speaker: Recent Advances in Selective Auditory Attention, Haizhou Li, NUS; Session Chair: Hemant Singh

Thursday, December 3, 8:00AM-8:36AM

CIFEr3: Machine Learning in Finance/Economics/Business, Chair: Michael Kampouridis, Room: Room 1

8:00AM *Automated Creation of a High-Performing Algorithmic Trader via Deep Learning on Level-2 Limit Order Book Data*
Aaron Wray, Matt Meades and Dave Cliff

8:06AM *Dynamic Portfolio Optimization Using a Hybrid MLP-HAR Approach*
Caio Mario Mesquita, Cristiano Arbex Valle and Adriano Cesar Pereira

8:12AM *Optimizing stock market execution costs using reinforcement learning*
Abdulrahman Ahmed, Ayman Ghoneim and Mohamed Saleh

8:18AM *Learning low-frequency temporal patterns for quantitative trading*
Joel Da Costa and Tim Gebbie

8:24AM *The Efficacy of Financial Ratios for Fraud Detection Using Self Organising Maps*
Wilson Tsakane Mongwe and Katherine Mary Malan

8:30AM *A Novel Algorithmic Trading Strategy Using Data-Driven Innovation Volatility*
You Liang, Aerambamoorthy Thavaneswaran and Md. Erfanul Hoque

CICS/MLCS1: Intrusion/malware detection, prediction, classification and response, Chair: Kaushik Roy, Room: Room 2

8:00AM *Effect of PE File Header Features on Accuracy*
Hasan H. Al-Khshali, Muhammad Ilyas and Osman N. Ucan

8:06AM *Intrusion Detection with Interpretable Rules Generated Using the Tsetlin Machine*
Kuruge Darshana Abeyrathna, Harsha Sandaruwan Gardiyawasam Pussewalage, Sasanka Niromi Ranasinghe, Vladimir Oleshchuk and Ole-Christoffer Granmo

8:12AM *Elliptic Envelope Based Detection of Stealthy False Data Injection Attacks in Smart Grid Control Systems*
Mohammad Ashrafuzzaman, Saikat Das, Ananth Jillepalli, Yacine Chakhchoukh and Frederick Sheldon

8:18AM *Fuzzy Hashing Aided Enhanced YARA Rules for Malware Triaging*
Nitin Naik, Paul Jenkins, Nick Savage, Longzhi Yang, Kshirasagar Naik, Jingping Song, Tossapon Boongoen and Natthakan Iam-On

8:24AM *Evaluating Automatically Generated YARA Rules and Enhancing Their Effectiveness*
Nitin Naik, Paul Jenkins, Roger Cooke, Jonathan Gillett and Yaochu Jin

8:30AM *AI-Powered Ransomware Detection Framework*
Subash Poudyal and Dipankar Dasgupta

ALIFE2: Evolution and Development/Self-organization and complex adaptive systems, Chair: Joseph Lizier, Room: Room 3

8:00AM *Improving Effectiveness and Efficiency in Wagner's Modularity-Evolving Artificial Gene Regulatory Networks*
Zhenyue Qin, Rouyi Jin, R. I. (Bob) McKay and Tom Gedeon

8:06AM *Evolution, Sympatric Speciation, and Risk Aversion*
Oluwatobi I. Ajagbe and Dean Frederick Hougen

8:12AM *Emergence and Stability of Self-Evolved Cooperative Strategies using Stochastic Machines*
Jin Hong Kuan and Aadesh Salecha

8:18AM *Growing MIDI Music Files Using Convolutional Cellular Automata*
Omar Delarosa and Lisa Soros

8:24AM *The distribution of inhibitory neurons in the C. elegans connectome facilitates self-optimization of coordinated neural activity*
Alejandro Morales and Tom Froese

8:30AM *Non-trivial informational closure of a Bayesian hyperparameter*
Martin Biehl and Ryota Kanai

AusDMApp2: Applications & Analytics, Chair: Rohan Baxter, Room: Room 4

8:00AM *Adaptive Data Replication Optimization Based on Reinforcement Learning*
Chee Keong Wee and Richi Nayak

8:06AM *Understanding the Spatio-temporal Topic Dynamics of Covid-19 using Nonnegative Tensor Factorization: A Case Study*
Thirunavukarasu Balasubramaniam, Richi Nayak and Bashar Md Abul

8:12AM *Balancing Utility and Fairness against Privacy in Medical Data*
Andrew Chester, Yun Sing Koh, Joerg Wicker, Quan Sun and Junjae Lee

8:18AM *Benchmarking Stacking Against Other Heterogeneous Ensembles in Telecom Churn Prediction*
Jan Kunnen, Maxime Duchateau, Ziboud Van Veldhoven and Jan Vanthienen

8:24AM *Explainability and Fairness in Machine Learning: Improve Fair End-to-end Lending for Kiva*
Alexander Stevens, Peter Deruyck, Ziboud Van Veldhoven and Jan Vanthienen

8:30AM *Wavelet-based denoising for EEG-based pattern recognition systems*
Binh Nguyen, Wanli Ma, Dat Tran and Younjin Chung

CIIoT2: Smart Cities/Energy, Chair: Amir H. Gandomi Mohammad S. Khan, Room: Room 5

8:00AM *Online Tensor Decomposition with optimized Stochastic Gradient Descent: an Application in Structural Damage Identification*
Ali Anaissi, Basem Suleiman and Seid Miad Zandavi

8:06AM *A Method of EV Detour-to-Recharge Behavior Modeling and Charging Station Deployment*
Tianshu Ouyang, Jiahong Cai, Yuxuan Gao, Xinyan He, Huimiao Chen and Kexin Hang

8:12AM *Parallel LSTM Architectures for Non-Intrusive Load Monitoring in Smart Homes*
Mohammad Mobasher-Kashani, Nasimul Noman and Stephan Chalup

8:18AM *An Auction based Edge Resource Allocation Mechanism for IoT-enabled Smart Cities*
Sampa Sahoo, Kshira Sagar Sahoo, Bibhudatta Sahoo and Amir H. Gandomi

8:24AM *Toci: Computational Intelligence in an Energy Management System*
Florian Huber and Markus Mock

8:30AM *Grid-Connected Renewable Energy Micro-Grids: A Systematic Review*
Mohammed Alshehri, Youguang Guo and Gang Lei

ADPRL2: New Exploration and Applications & Learning Rules and Architectures, Chair: Zhiqiang Wan Haibo He, Room: Room 6

8:00AM *XCSF with Experience Replay for Automatic Test Case Prioritization*
Lukas Rosenbauer, Anthony Stein, David Paetzel and Joerg Haehner

8:06AM *A Multi-objective Evolutionary Algorithm based on R2 Indicator for Pickup and Delivery Problem with Time Windows*
Li Li, Avimanyu Sahoo and Liang Chang

8:12AM *Deception in A Multi-agent Adversarial Game: The Game of Guarding Several Territories*
Amirhossein Asgharnia, Howard M. Schwartz and Mohamed Atia

8:18AM *Optimized Deep Neural Network Architectures with Anchor Box Optimization for Shipping Container Corrosion Inspection*
Zhila Bahrami, Ran Zhang, Rakiba Rayhana, Teng Wang and Zheng Liu

8:24AM *Automatically Resolve Trouble Tickets with Hybrid NLP*
Nicolas Ferland, Wenting Sun, Xuancheng Fan, Lule Yu and Jieneng Yang

8:30AM *Neural Network Design: Learning from Neural Architecture Search*
Bas van Stein, Hao Wang and Thomas Back

CIDUE2: Learning in Non-Stationary and Uncertain Environments/Dynamic Single and Multi-Objective Optimization, Chair: Michalis Mavrovouniotis, Room: Room 7

8:00AM *Reactive Concept Drift Detection Using Coresets Over Sliding Windows*
Moritz Heusinger and Frank-Michael Schleif

8:06AM *Machine Learning-Based Models for Assessing Physical and Social Impacts Before, During and After Hurricane Michael*
Harvey Julie, Kumar Sathish and Bao Shaowu

8:12AM *To Measure or not to Measure? Adaptive Repetition Management in Parameter Tuning*
Dmytro Pukhkaiev, Yevhenii Semendiak and Uwe Assmann

8:18AM *Deep hierarchical reinforcement learning in a markov game applied to fishery management decision making*
Nicolas Poiron-Guidoni, Paul-Antoine Bisgambiglia and Paul Bisgambiglia

8:24AM *Optimal Control using Evolutionary Algorithms through Neural network based TRANSFORMation*
Srinivas Soumitri Miriyala and Kishalay Mitra

8:30AM *Towards a More Practically Sound Formulation of Dynamic Problems and Performance Evaluation of Dynamic Search Methods*
Ali Ahrari, Saber Elsayed, Ruhul Sarker, Daryl Essam and Carlos Coello

CISDA1: Defense and Security Applications, Chair: Rami Abielmona Robert Hunjet, Room: Room 8

8:00AM *An Exploration of Meta-Heuristic Approaches for the Project Portfolio Selection and Scheduling Problem in a Defence Context*
Kyle Robert Harrison, Saber Elsayed, Terence Weir, Ivan L. Garanovich, Richard Taylor and Ruhul Sarker

8:06AM *Autonomous Target Allocation Recommendations*
Luke Marsh, Jason Traish, Madeleine Cochrane, Riley Lodge, Brendan Sims and Richard Xu

8:12AM *Analyzing Privacy of Time Series Data Using Substitute Autoencoder Neural Network*
Sayantica Pattanayak and Simone Ludwig

8:18AM *Exploring Tunneling Behaviours in Malicious Domains With Self-Organizing Maps*
Adam J. Campbell and Nur Zincir-Heywood

8:24AM *Temporal Behavior in Network Traffic as a Basis for Insider Threat Detection*
Brett Rajchel, John Monaco, Gurminder Singh, Angela Hu, Jarrod Shingleton and Thomas Anderson

8:30AM *Airborne Localisation of Small UAS using Visual Detection: A Field Experiment*
Giuseppe Laurito, Bradley Fraser and Kent Rosser

Thursday, December 3, 8:48AM-9:24AM

DL2: Deep Learning Applications, Chair: Alessandro Sperduti, Room: Room 1

8:48AM *Automatic annotation of pedestrians in thermal images using background/foreground segmentation for training deep neural networks*
Zuhaib Ahmed Shaikh, Gianni Allebosch, Peter Veelaert and Philips Wilfried

8:54AM *CGLER: Laban Effort Framework Analysis with Conducting Gestures Using Neural Networks*
Faith Tan, Gideon Woo and Herbert H. Tsang

9:00AM *The Effects of Non-linear Operators in Voxel-Based Deep Neural Networks for 3D Style Reconstruction*
Timo Friedrich, Patricia Wollstadt and Stefan Menzel

9:06AM *Quantifying The Generative Capabilities Of Variational Autoencoders For 3D Car Point Clouds*
Sneha Saha, Stefan Menzel, Leandro L. Minku, Xin Yao, Bernhard Sendhoff and Patricia Wollstadt

9:12AM *Device Placement Optimization for Deep Neural Networks via One-shot Model and Reinforcement Learning*
Zixiang Ding, Yaran Chen, Nannan Li and Dongbin Zhao

9:18AM *Edge Computing Based Smart Aquaponics Monitoring System Using Deep Learning in IoT Environment*
Arvind Channnarayapatna Srinivasa, Jyothi Ranganath, Kaushal Kishor, Girish Ganjihal, Saurav Raja and Chetan Kumar

CICS/MLCS2: Security of CI Techniques, Adversarial behavior, machine learning applications in cyber security, Chair: Michael Phillips, Room: Room 2

8:48AM *Ads-Guard: Detecting Scammers in Online Classified Ads*
Suhaib Al-Rousan, Abdullah Abuhussein, Faisal Alsubaei, Lynn Collen and Sajjan Shiva

8:54AM *A Deep Marginal-Contrastive Defense against Adversarial Attacks on 1D Models*
Mohammed Hassanin, Nour Moustafa and Murat Tahtali

9:00AM *Applicability issues of Evasion-Based Adversarial Attacks and Mitigation Techniques*
Kishor Datta Gupta, Dipankar Dasgupta and Zahid Akhtar

9:06AM *Internet of Things Threat Detection: A Deep Learning Approach*
Ahmed Dawoud, Omid Ameri Sianaki, Seyed Shahristani and Chun Ruan

9:12AM *The Adversarial UFP/UFN Attack: A New Threat to ML-based Fake News Detection Systems?*
Brandon Brown, Alexicia Richardson, Marcellus Smith, Gerry Dozier and Michael King

9:18AM *Interpretable Machine Learning Tools: A Survey*
Namita Agarwal and Saikat Das

SIS2: Swarm Intelligence for Optimization, Chair: Sanaz Mostaghim Yuhui Shi, Room: Room 3

8:48AM *A Study on Parameter Sensitivity Analysis of the Virus Spread Optimization*
Zhixi Li, Vincent Tam and Lawrence K. Yeung

8:54AM *Bacterial Foraging Optimization Based on Multi-colony Cooperation Strategy*
Churong Zhang, Jun Yu and Ben Niu

9:00AM *Dynamic Multi-Swarm Fractional-best Particle Swarm Optimization for Dynamic Multi-modal Optimization*
Simon Dennis and Andries Engelbrecht

9:06AM *Analysis of Particle Swarm Optimisation for Training Support Vector Machines*
Thorsten Schmidt-Dumont and Andries Petrus Engelbrecht

9:12AM *Topology-Linked Self-Adaptive Quantum Particle Swarm Optimization for Dynamic Environments*
Rethabile Mabaso and Christopher Cleghorn

9:18AM *Improved Set-based Particle Swarm Optimization for Portfolio Optimization*
Kyle Erwin and Andries Engelbrecht

CICARE2: Computer Vision, Pattern Recognition and Machine Learning Applied to Healthcare, Chair: Mufti Mahmud, Room: Room 4

8:48AM *NLP-Based Approach to Detect Autism Spectrum Disorder in Saccadic Eye Movement*
Mahmoud Elbattah, Jean-Luc Guerin, Romuald Carette, Federica Cilia and Gilles Dequen

8:54AM *Automated Pain Assessment: Is it Useful to Combine Person-Specific Data Samples?*
Peter Bellmann and Friedhelm Schwenker

9:00AM *Synchronicity Identification in Hippocampal Neurons using Artificial Neural Network assisted Fuzzy C-means Clustering*
Priyanka D Pantula, Srinivas S Miriyala, Lopamudra Giri and Kishalay Mitra

9:06AM *Chatbot for Peer Support Realization based on Mutual Care*
Akihiro Yorita, Simon Egerton, Carina Chan and Kubota Naoyuki

9:12AM *Adaptation of Convolutional Neural Networks for Multi-Channel Artifact Detection in Chronically Recorded Local Field Potentials*
Marcos Fabietti, Mufti Mahmud, Ahmad Lotfi, Alberto Averna, David Guggenmos, Randolph Nudo and Michela Chiappalone

9:18AM *Data Analysis of Lead Contamination in New York*
Shelley John, Pillai Manu and Kumar Sathish

ASM1: Simulation-Based Optimization, Chair: Li Qiao Hasan H. Turan, Room: Room 5

8:48AM *Solving Strategic Military Workforce Planning Problems with Simulation-Optimization*
Hasan Turan, Sondoss Elsawah, Fatemeh Jalalvand and Michael Ryan

8:54AM *A multi-objective risk-averse workforce planning under uncertainty*
Fatemeh Jalalvand, Hasan Huseyin Turan, Sondoss Elsawah and Michael J. Ryan

9:00AM *A Simulation Method of Personnel Evacuation Management Based on Mulit-Agent Models*
Yingfei Zhang, Gongpeng Zhang, Ruixin Wang and Xiaobing Hu

9:06AM *Time-Limited Search and Optimization of the Spatial Positioning of Agents in Virtual Environments*
Marcos S. Morgenstern, Felipe G. Pires, Edison P. Freitas and Luis A. L. Silva

9:12AM *Enhanced Sampling of Nucleic Acids' Structures Using Deep-Learning-Derived Biasing Forces*
Emmanuel Salawu

9:18AM *Analysis of Business Processes in Supply Chain: An Interpretive Structural Modeling Approach*
Li Qiao and Michael Ryan

EDACI2: Evolutionary Optimization Based Efficient Computation Models/Fuzzy Rule-Based Systerms for Nonlinear Modelling/Time Series and Systems Modelling, Chair: Peng Ren, Room: Room 6

8:48AM *Surrogate Approximation on Bilevel Multi Follower Optimization Problems*
Md Monjurul Islam, ASSM Barkat Ullah, Md Hasan Furhad and Saiba Nazah

8:54AM *Hybrid Fuzzy Weighted K-Nearest Neighbor to Predict Hospital Readmission for Diabetic Patients*
Soha A. Bahanshal and Kim G. Byung

9:00AM *Visualization and Analysis Tools for Explainable Choquet Integral Regression*
Siva Krishna Kakula, Anthony Pinar, Timothy Havens and Derek Anderson

9:06AM *Interpretable Multivariate Time Series Forecasting with Temporal Attention Convolutional Neural Networks*
Leonardos Pantiskas, Kees Verstoep and Henri Bal

9:12AM *Online System Identification for Nonlinear Uncertain Dynamical Systems Using Recursive Interval Type-2 TS Fuzzy C-means Clustering*
Ayad Al-Mahturi, Fendy Santoso, Matthew Garratt and Sreenatha Anavatti

9:18AM *Time and Cost Prediction Models for Language Classification Over a Large Corpus on Spark*
Jairson Rodrigues, Germano Vasconcelos and Paulo Maciel

CIBIM:Biometric Techniques and Systems/Machine Learning and AI in Biometrics and Identity Management, Chair: Masood Khan Svetlana Yanushkevich, Room: Room 7

8:48AM *Joint Multiple-type Features Encoding for Palmprint Recognition*
Zheng Yongmin, Fei Lunke, Wen Jie, Teng Shaohua, Zhang Wei and Rida Imad

8:54AM *Towards Potential of N-back Task as Protocol and EEGNet for the EEG-based Biometric*
Nima Salimi, Michael Barlow and Erandi Lakshika

9:00AM *Efficient Method for High-Resolution Fingerprint Image Enhancement Using Deep Residual Network*
Zhenzhen Yang, Yuanrong Xu and Guangming Lu

9:06AM *A Comparison of Genetic & Swarm Intelligence- Based Feature Selection Algorithms for Author Identification*
Steve Halladay and Gerry Dozier

9:12AM *Motion Identification of fingerspelling by Wrist EMG Analysis*
Tsubasa Fukui, Momoyo Ito, Shin-ichi Ito and Fukumi Minoru

9:18AM *Detecting Proper Mask Usage with Soft Attention*
Thomas Truong, Lalseta Dhyey, Ittyipe Ryan and Yanushkevich Svetlana

AusDMRes2: Data, Text, Web and Social Network Mining, Chair: Yue Xu Mohammad Abualsheikh, Room: Room 8

8:48AM *AiCE: automating horizon scanning for the detection of emerging technologies*
Daniel Bongiorno, Nivedita Prakasan, Jordan Truswell, Michael Posadowski and James Walsh

8:54AM *Predicting the Outcome of Judicial Cases using Semantic Analysis*
Rohit Pande and Shafiq Alam

9:00AM *Multi-view learning for context-aware extractive summarization*
Zhenyu Yang, Jie Yang, Brian Yecies and Wanqing Li

9:06AM *Discovering Communities with SGNS Modelling-based Network connections and Text communications Clustering*
Wathsala Anupama Mohotti and Richi Nayak

9:12AM *TAnoGAN: Time Series Anomaly Detection with Generative Adversarial Networks*
Md Abul Bashar and Richi Nayak

9:18AM *Regression learning on patches*
Joerg Frochte and Stephen Marsland

Thursday, December 3, 9:36AM-10:12AM

CIMSIVP: Multimedia and Multimodal Data Analysis/Computer Vision/Signal Processing, Chair: Harith Al-Sahaf, Room: Room 1

9:36AM *Augmenting Telephony Audio Data using Robust Principal Component Analysis*
Ronald K. Mo and Albert Y.S. Lam

9:42AM *Multi pitch estimation of piano music using Cartesian Genetic Programming with Spectral Harmonic Mask*
Rolando Miragaia, Gustavo Reis, Francisco Fernandez de Vega and Francisco Chavez

9:48AM *Deep Domain Adpative Object Detection: a Survey*
Wanyi Li, Fuyu Li, Yongkang Luo, Peng Wang and Jia Sun

9:54AM *Adversarial and Adaptive Tone Mapping Operator for High Dynamic Range Images*
Xingdong Cao, Kenneth Lai, Svetlana Yanushkevich and Michael Smith

10:00AM *Performance Indicator in Multilinear Compressive Learning*
Dat Thanh Tran, Moncef Gabbouj and Alexandros Iosifidis

10:06AM *Real-Time Deep Learning-Based Object Detection Framework*
William Tarimo, Moustafa Sabra and Shonan Hendre

CICS/MLCS3: Identity science, authentication and access control, Chair: Dipankar Dasgupta, Room: Room 2

9:36AM *Analyzing of LAM-CIoT: Lightweight Authentication Mechanism in Cloud-based IoT Environment*
Ahmed Yaser Fahad Alsahlani and Alexandru Popa

9:42AM *Voice Feature Learning using Convolutional Neural Networks Designed to Avoid Reply Attacks*
Salahaldeen Duraibi, Wasim Alhamdani and Frederick T. Sheldon

9:48AM *TRA: Effective Authentication Mechanism For Swarms Of Unmanned Aerial Vehicles*
Tran Duy Khanh, Komarov Igor, Le Duy Don, Iureva Radda and Chuprov Sergey

9:54AM *A Study of the Impact of Evolutionary-Based Feature Selection for Fake News Detection*
Marcellus Smith, Alexicia Richardson, Brandon Brown, Gerry Dozier, Michael King and Joshua Morris

10:00AM *DeepFake Detection on Publicly Available Datasets using Modified AlexNet*
Daniel Xie, Prosenjit Chatterjee, Zhipeng Liu, Kaushik Roy and Edoh Kossi

10:06AM *Security and a Framework for Identity*
Janelle Mason and Albert Esterline

RiiSS: Computational Intelligence in Robotics, Chair: Hiroyuki Masuta Naoki Masuyama, Room: Room 3

9:36AM *Autonomous decision making by the self-generated priority under multi-task*
Takuma Kambayashi and Kentarou Kurashige

9:42AM *Self-generation of reward based on sensor value -Improving reward accuracy by associating multiple sensors using Hebb's rule-*
Sosuke Kondo and Kentarou Kurashige

9:48AM *Automation of Illuminance measurement in a large scene by an autonomous Mobile Robot*
Cheng Tang, Ryota Inoue, Kohei Oshio, Makoto Tsujimoto, Kazuhiko Taniguchi and Naoyuki Kubota

9:54AM *Interactive adaptation of Hand-over Motion by a Robot Partner for Comfort of receiving*
Nao Yamada, Mohamad Yani and Naoyuki Kubota

10:00AM *Real-Time Simultaneous Localization and Mapping for Low-Power Wide-Area Communication*
Alfin Junaedy, Hiroyuki Masuta, Kei Sawai, Tatsuo Motoyoshi and Noboru Takagi

10:06AM *Multi-label Classification Based on Adaptive Resonance Theory*
Naoki Masuyama, Yusuke Nojima, Chu Loo and Hisao Ishibuchi

CICA2: Neural Network Control/Fuzzy Systems and Control/Intelligent and AI Based Control, Chair: Xiao-Jun Zeng Daoyi Dong, Room: Room 4

9:36AM *Nonlinear Model Predictive Control of Industrial Grinding Circuits using Machine Learning*
Ravi kiran Inapakurthi, Srinivas Soumitri Miriyala, Suryanarayana Kolluri and Kishalay Mitra

9:42AM *Evolving Spiking Neurocontrollers for UAVs*
Huanneng Qiu, Matthew Garratt, David Howard and Sreenatha Anavatti

9:48AM *Adaptive Backstepping Neural Tracking Control of an Uncertain Robot Manipulator with Dynamic Disturbances*
Ravi Prakash, Kurusetti Vinay Gupta and Laxmidhar Behera

9:54AM *Pipeline Leak Detection and Location based on Fuzzy Controller*
Sina Razvarz, Raheleh Jafari, Cristobal Vargas-Jarillo, Alexander Gegov and Farzad Arabikhan

10:00AM *Implementation and analysis of dynamic stability for bipedal robotic motion*
Matthew Amos, Richard Middleton, Alexander Biddulph and Alexandre Mendes

10:06AM *A Dynamic Data-Driven Model for Optimizing Waste Collection*
Peiman Alipour Sarvari, Issam Abdeldjalil Ikhelef, Sebastien Faye and Djamel Khadraoui

SNCC1: Spiking Neural Networks, Chair: Andre van Schaik Huajin Tang, Room: Room 5

9:36AM *Reservoir generation via simulating the non-local connections between brain functional columns*
Yifan Wu, Yunhua Chen and Pinghua Chen

9:42AM *Robustness of the Sacle-free Spiking Neural Network with Small-world Property*
Dongzhao Liu, Lei Guo, Youxi Wu and Guizhi Xu

9:48AM *A Spiking Neural Network Based Auto-encoder for Anomaly Detection in Streaming Data*
Peter Stratton, Andrew Wabnitz and Tara Hamilton

9:54AM *Evolving Ensembles of Spiking Neural Networks for Neuromorphic Systems*
Daniel Elbrecht, Shruti Kulkarni, Maryam Parsa, J. Parker Mitchell and Catherine Schuman

10:00AM *Training Spiking Neural Networks Using Combined Learning Approaches*
Daniel Elbrecht, Maryam Parsa, Shruti Kulkarni, J. Parker Mitchell and Catherine Schuman

10:06AM *AugMapping: Accurate and Efficient Inference with Deep Double-Threshold Spiking Neural Networks*
Chenxiang Ma and Qiang Yu

FASLIP2:Image Analysis/Pattern Recognition, Chair: Mengjie Zhang, Room: Room 6

9:36AM *Improvement of Mixture-of-Experts-Type Model to Construct Dynamic Saliency Maps for Predicting Drivers' Attention*
Nakazawa Sorachi and Nakada Yohei

9:42AM *Search for the real McCoy: Authorship Attribution*
Aishwarya Asesh

9:48AM *A Novel Algorithm to Detect Brain Tumor using Staged-Type-II Fuzzy Classifier*
Ananya Das and Subhashis Chatterjee

9:54AM *Computational Intelligence in Human Feature Analysis and Pose Selection*
Jacob Pettigrew, Gideon Woo and Herbert H. Tsang

10:00AM *Damage Detection in Composite Plates with Ultrasonic Guided-waves and Nonlinear System Identification*
Mateus Gheorghe De Castro Ribeiro, Alan Conci Kubrusly and Helon Vicente Hultmann Ayala

10:06AM *Detecting Subject-Weapon Visual Relationships*
Thomas Truong and Yanushkevich Svetlana

CIDM2: Data Mining/Machine Learning, Chair: Bing Xue, Room: Room 7

9:36AM *Automatic Personality Prediction: A Systematic Mapping Study*
Khaoula Chraibi, Ilham Chaker and Azeddine Zahi

9:42AM *Consumer Behavior Analysis using EEG Signals for Neuromarketing Application*
Chowdhury Rabith Amin, Mirza Farhan Hasin, Tasin Shafi Leon, Abrar Bareque Aurko, Tasmi Tamanna, Md Anisur Rahman and Mohammad Zavid Parvez

9:48AM *Algorithmic Frameworks for the Detection of High-Density Anomalies*
Ralph Foorthuis

9:54AM *A Rule and Graph-Based Approach for Targeted Identity Resolution on Policing Data*
Michael Phillips, Mohammad Hossein Amirhosseini and Hassan B. Kazemian

10:00AM *Adaptive Continuous Feature Binarization for Tsetlin Machines Applied to Forecasting Dengue Incidences in the Philippines*
Kuruge Darshana Abeyrathna, Ole-Christoffer Granmo, Xuan Zhang and Morten Goodwin

10:06AM *Data Imputation for Symbolic Regression with Missing Values: A Comparative Study*
Baligh Al-Helali, Qi Chen, Bing Xue and Mengjie Zhang

ICES: Evolvable System Techniques & Applications/Evolutionary Robotics, Chair: Martin A. Trefzer Andy Tyrrell, Room: Room 8

9:36AM *On Comparison of Some Representations for the Evolution of Quantum Operators*
Michal Bidlo and Petr Zufan

9:42AM *Quality and Diversity in Evolutionary Modular Robotics*
Jrgen Nordmoen, Frank Veenstra, Kai Olav Ellefsen and Kyrre Glette

9:48AM *The Effects of Adaptive Control on Learning Directed Locomotion*
Fuda van Diggelen, Robert Babuska and Aguston E. Eiben

9:54AM *Robotic task affects the resulting morphology and behaviour in evolutionary robotics*
Matteo De Carlo, Daan Zeeuwe, Eliseo Ferrante, Gerben Meynen, Jacintha Ellers and A.E. Eiben

10:00AM *Evolution of Diverse, Manufacturable Robot Body Plans*
Edgar Buchanan, Leni K. Le Goff, Emma Hart, Agoston E. Eiben, Matteo De Carlo, Wei Li, Matthew F. Hale, Mike Angus, Robert Woolley, Alan F. Winfield, Jon Timmis and Andy M. Tyrrell

10:06AM *Hardware Design for Autonomous Robot Evolution*
Matthew F. Hale, Mike Angus, Edgar Buchanan, Wei Li, Robert Woolley, Leni K. Le Goff, De Carlo Matteo, Jon Timmis, Alan F. Winfield, Emma Hart, Agoston E. Eiben and Andy M. Tyrrell

Thursday, December 3, 7:00PM-9:00PM

Panel Session: Perspectives of Trust and Intelligence, Chair: Keeley Crockett, Room: Room 1

Panellists: Keeley Crockett, Bernadette Bouchon-Meunier, Sanaz Mostaghim, Aurelie Jacquet, and Mary-Anne Williams

Friday, December 4, 7:00AM-8:00AM

Plenary Speaker: Distributed Intelligence for a Consumer-Centric Electricity Grid, Sylvie Thiebaux, ANU; Session Chair: Prof. Hussein Abbass

Friday, December 4, 8:00AM-8:36AM

CIFEr4: Machine Learning in Finance/Economics/Business, Chair: Ruppa Thulasiram, Room: Room 1

8:00AM *(Energy) Policies Can Be Complicated: So Be Careful With Your Simulators!*
Eric Austin and Joerg Denzinger

8:06AM *Low-Rank Temporal Attention-Augmented Bilinear Network for financial time-series forecasting*
Mostafa Shabani and Alexandros Iosifidis

8:12AM *Using Generative Adversarial Networks for Detecting Stock Price Manipulation: The Stock Exchange of Thailand Case Study*
Teema Leangarun, Poj Tangamchit and Suttipong Thajchayapong

8:18AM *Probabilistic Analysis of Market Impact of Analysts' Recommendation Revisions*
Brian Sing Fan Chan and Joshua Zoen-Git Hiew

8:24AM *A Network Analysis of the Cryptocurrency Market*
Kin Hon Ho, Wai Han Chiu and Chin Li

8:30AM *PaletteViz with Star-coordinates: An Improved Method for High-dimensional Pareto-optimal Front Visualization and Decision-making*
AKM Khaled Talukder and Kalyanmoy Deb

MASCO: Multi-Agent Systems (Modelling, Identification, Optimization, Consensus, Flocking and Containment Control), Chair: Kai Wu, Room: Room 2

8:00AM *Path Planning for Shepherding a Swarm in a Cluttered Environment using Differential Evolution*
Saber Elsayed, Hemant Singh, Essam Debie, Anthony Perry, Benjamin Campbell, Robert Hunjet and Hussein Abbass

8:06AM *Cooperative Multi-agent Inverse Reinforcement Learning Based on Selfish Expert and its Behavior Archives*
Yukiko Fukumoto, Masakazu Tadokoro and Keiki Takadama

8:12AM *Optimal Consensus Control for Second-Order Discrete-Time Multi-Agent Systems: Using Online Policy Iteration Algorithm*
Li Jun and Ji Lianghao

8:18AM *Tracking Footprints in a Swarm: Information-Theoretic and Spatial Centre of Influence Measures*
Adam Hepworth, Kate Yaxley, Daniel Baxter, Keith Joiner and Hussein Abbass

8:24AM *Detecting Communities in Networks: a Decentralized Approach Based on Multiagent Reinforcement Learning*
Eduardo C. Paim, Ana L.C. Bazzan and Camelia Chira

ALIFE3: Swarm Robotics/Robotics and Embodiment, Chair: Joseph Lizier, Room: Room 3

8:00AM *Social Distancing in Robot Swarms: Modulating Exploitation and Exploration Without Signal Exchange*
Michael Vogrin, Martin Stefanec and Thomas Schmickl

8:06AM *Training an artificial bat: Modeling sonar-based obstacle avoidance using deep-reinforcement learning*
Adithya Venkatesh Mohan and Vanderelst Dieter

8:12AM *Levels of Coupling in Dyadic Interaction: An Analysis of Neural and Behavioral Complexity*
Georgina Montserrat Resendiz-Benhumea, Ekaterina Sangati and Tom Froese

8:18AM *Disturbances in Influence of a Shepherding Agent is More Impactful than Sensorial Noise During Swarm Guidance*
Hung Nguyen, Garratt Matthew, Bui Lam and Abbass Hussein

8:24AM *Behavioral Repertoires for Soft Tensegrity Robots*
Kyle Doney, Aikaterini Petridou, Jacob Karaul, Geoffrey Liu and John Rieffel

8:30AM *Influences of Artificial Speciation on Morphological Robot Evolution*
Matteo De Carlo, Daan Zeeuwe, Eliseo Ferrante, Gerben Meynen, Jacintha Ellers and A.E. Eiben

ENASA1: Neuroevolution/Neural Architecture Design, Chair: Yanan Sun, Room: Room 4

8:00AM *Objective Comparison and Selection in Mono- and Multi-Objective Evolutionary Neurocontrollers*
Ian Showalter and Howard Schwartz

8:06AM *EvoFlow: A Python Library for Evolving Deep Neural Network Architectures in Tensorflow*
Unai Garciarena, Roberto Santana and Alexander Mendiburu

8:12AM *Neuroevolution Architecture Backbone for X-ray Object Detection*
Kevin Richard Operiano, Hitoshi Iba and Wanchalerm Pora

8:18AM *Exploring the Relationship Between Topology and Function in Evolved Neural Networks*
Ian Showalter and Howard Schwartz

8:24AM *Optimizing the Energy Consumption of Neural Networks*
Jan Linus Steuler, Markus Beck, Benjamin N. Passow and Michael Guckert

8:30AM *Evolving Feedforward Neural Networks Using a Quasi-Opposition-Based Differential Evolution for Data Classification*
Seyed Jalaleddin Mousavirad and Shahryar Rahnamayan

GAME: AI For Games, Chair: Mike Preuss Raluca Gaina, Room: Room 5

8:00AM *Short-Term Trajectory Planning in TORCS using Deep Reinforcement Learning*
Emilio Capo and Daniele Loiacono

8:06AM *On the Potential of Rocket League for Driving Team AI Development*
Yannick Verhoeven and Mike Preuss

8:12AM *Playing Carcassonne with Monte Carlo Tree Search*
Fred Valdez Ameneyro, Edgar Galvan and Angel Fernando Kuri Morales

8:18AM *Designing Card Game Strategies with Genetic Programming and Monte-Carlo Tree Search: A Case Study of Hearthstone*
Hao-Cheng Chia, Tsung-Su Yeh and Tsung-Che Chiang

8:24AM *Playing Mega Man II with Neuroevolution*
Fernando Ishikawa, Leandro Zangirolami, Leonardo Carmo, Fabricio Olivetti and Denis Fantinato

8:30AM *A Framework to Create Collaborative Games for Team Building using Procedural Content Generation*
Umberto Picariello, Daniele Loiacono, Fabio Mosca and Pierluca Lanzi

ESCO1: Timetabling/Vehicle Routing, Chair: Yi Mei, Room: Room 6

8:00AM *Minimizing Total Clinical Deterioration in Operating Theatres*
Omolbanin Mashkani, Hanyu Gu, Dhananjay Thiruvady and Andreas T. Ernst

8:06AM *The Unexpected Virtue of Problem Reductions or How to Solve Problems Being Lazy but Wise*
Luke Mathieson and Pablo Moscato

8:12AM *An Extendable Platform for Routing Problem: Optimisation, Evaluation and Solution Visualisation*
Chenhao Li, Jiyuan Pei, Qingquan Zhang, Jialin Liu and Xin Yao

8:18AM *Towards Interpretable Routing Policy: A Two Stage Multi-Objective Genetic Programming Approach with Feature Selection for Uncertain Capacitated Arc Routing Problem*
Shaolin Wang, Yi Mei and Mengjie Zhang

8:24AM *Diversity-driven Knowledge Transfer for GPHH to Solve Uncertain Capacited Arc Routing Problem*
Mazhar Ansari Ardeh, Yi Mei and Zhang Mengjie

8:30AM *Adaptive Search Space through Evolutionary Hyper-Heuristics for the Large-Scale Vehicle Routing Problem*
Joao Guilherme Cavalcanti Costa, Yi Mei and Mengjie Zhang

FOCI: Foundations of Bio-Inspired Metaheuristics and Neural Networks, Chair: Chao Qian, Room: Room 7

8:00AM *Locality Bounds for Nonredundant Binary-Integer Representations*
Hrishee Shastri and Eitan Frachtenberg

8:06AM *A Genetic Algorithm for Finding Regular Graphs with Minimum Average Shortest Path Length*
Reiji Hayashi, Tsuyoshi Migita and Norikazu Takahashi

8:12AM *Visualizing and Characterizing the Parameter Configuration Landscape of Differential Evolution using Physical Landform Classification*
Kyle Robert Harrison, Beatrice M. Ombuki-Berman and Andries P. Engelbrecht

8:18AM *Multiobjectivization of Local Search: Single-Objective Optimization Benefits From Multi-Objective Gradient Descent*
Vera Steinhoff, Pascal Kerschke, Pelin Aspar, Heike Trautmann and Christian Grimme

8:24AM *Autoencoder Latent Space: an Empirical Study*
Leticia Lapenda, Rodrigo Monteiro and Carmelo Bastos-Filho

8:30AM *Performance Comparison of Multi-Objective Evolutionary Algorithms on Simple and Difficult Many-Objective Test Problems*
Longcan Chen, Ke Shang and Hisao Ishibuchi

CISDA2: Situational Assessment/Modeling and Simulation of Defense Operations/ASM2: Simulation-based optimization, Chair: Hasan H. Turan Robert Hunjet, Room: Room 8

8:00AM *Enabling Maritime Risk Assessment Using Natural Language Processing-based Deep Learning Techniques*
Vladislav Jidkov, Rami Abielmona, Alexander Teske and Emil Petriu

8:06AM *Automated Detection of Microaggression using Machine Learning*
Omar Ali, Nancy Scheidt, Alexander Gegov, Ella Haig, Mo Adda and Benjamin Aziz

8:12AM *Deterministic Numeric Simulation and Surrogate Models with White and Black Machine Learning Methods: A Case Study on Direct Mappings.*
Julio J. Valdes and Alain B. Tchagang

8:18AM *Deterministic Numeric Simulation and Surrogate Models with White and Black Machine Learning Methods: A Case Study on Inverse Mappings.*
Julio J. Valdes and Alain B. Tchagang

8:24AM *A Differential Evolution Algorithm for Military Workforce Planning Problems: A Simulation-Optimization Approach*
Karam Sallam, Hasan Turan, Ripon Chakrabortty, Sondoss Elsawah and Michael Ryan

8:30AM *A Multi-Armed Bandit Strategy for Countermeasure Selection*
Madeleine Cochrane and Robert Hunjet

Friday, December 4, 8:48AM-9:24AM

ECV: Deep Learning/Medical Imaging, Chair: Li Zhang, Room: Room 1

8:48AM *Deep Learning based Segmentation for Multi MR Imaging Protocols using Transfer Learning for PET Attenuation Correction*
Imene Mecheter, Abbes Amira, Maysam Abbod and Habib Zaidi

8:54AM *Deep Learning for Screening COVID-19 using Chest X-Ray Images*
Sanhita Basu, Sushmita Mitra and Nilanjan Saha

9:00AM *Brain Magnetic Resonance Imaging Generation using Generative Adversarial Networks*
Emanuel Alogna, Edoardo Giacomello and Daniele Loiacono

9:06AM *Automated Artifacts and Noise Removal from Optical Coherence Tomography Images Using Deep Learning Technique*
Nahida Akter, Stuart Perry, John Fletcher, Matthew Simunovic and Maitreyee Roy

9:12AM *Efficiently Coevolving Deep Neural Networks and Data Augmentations*
Geoff Nitschke, Sasha Abramowitz, Shane Acton and Liron Toledo

9:18AM *Chaos, Machine Learning and Deep Learning based Hybrid to forecast Consumer Price Index Inflation in India*
Sarveswara Rao Vangala and Ravi Vadlamani

IA: Intelligent and Robotic Agents/Unmanned Vehicles and Multi UV systems, Chair: Farookh Hussain Sabrina Senatore, Room: Room 2

8:48AM *Convolutional Neural Network for Honeybee Density Estimation*
Tomas Luneckas, Mindaugas Luneckas, Ziad Salem, Martina Szopek and Thomas Schmickl

8:54AM *Smart Data Agent for Preserving Location Privacy*
Harkeerat Kaur, Isao Echizen and Rohit Kumar

9:00AM *Exploiting a Multi-device Knowledge Meshing to Agent-based Activity Tracking*
Danilo Cavaliere and Sabrina Senatore

9:06AM *Leveraging Emergent Specialization in a Heterogeneous Multi-Role Swarm Control Architecture for Positional-based UAS Missions*
Bradley Fraser, Claudia Szabo, Andrew Coyle and Robert Hunjet

9:12AM *Self-Adaptation of Meta-Parameters for Lamarckian-Inherited Neuromodulated Neurocontrollers in the Pursuit-Evasion Game*
Ian Showalter and Howard Schwartz

9:18AM *Coevolutionary Deep Reinforcement Learning*
David Cotton, Jason Traish and Zenon Chaczko

CIPLS: Production Scheduling and Planning, Chair: Raymond Chiong, Room: Room 3

8:48AM *A Two-phase Heuristic Method for Agri-fresh Inventory Optimisation*
Mehdi Abedi, Parichehr Paam and Regina Berretta

8:54AM *Improved Nondominated Sorting Genetic Algorithm-II for Bi-objective Flexible Job-shop Scheduling Problem*
Shu Luo, Linxuan Zhang and Yushun Fan

9:00AM *Investigating RNNs for vehicle volume forecasting in service stations*
Himadri Sikhar Khargharia, Roberto Santana, Siddhartha Shakya, Russell Ainslie and Gilbert Owusu

9:06AM *Robust Supply Chains with Gradient Boosted Trees*
Pradeep Kumar Mahato and Apurva Narayan

9:12AM *Application of data-based prediction methods in newsvendor problems subject to purchase price uncertainty*
Marcela Guimaraes, Isis Lins, Marcio Moura and Heitor Duarte

9:18AM *Combining Deep Reinforcement Learning with Search Heuristics for Solving Multi-Agent Path Finding in Segment-based Layouts*
Robbert Reijnen, Yingqian Zhang, Wim Nuijten, Caglar Senaras and Mariana Goldak - Altgassen

ENASA2: Evolutionary Neural Architecture Search, Chair: Yanan Sun, Room: Room 4

8:48AM *Using a Semi-Evolutionary Algorithm to Optimize Deep Network Hyper-Parameters with an Application to Donor Detection*
Yu Bai and Michael Bain

8:54AM *A Memetic Algorithm for Evolving Deep Convolutional Neural Network in Image Classification*
Junwei Dong, Liangjie Zhang, Boyu Hou and Liang Feng

9:00AM *Evolutionary NAS with Gene Expression Programming of Cellular Encoding*
Clifford Broni-Bediako, Yuki Murata, Luiz H. B. Mormille and Masayasu Atsumi

9:06AM *Evolving Optimal Convolutional Neural Networks*
Subhashis Banerjee and Sushmita Mitra

9:12AM *GPCNN: Evolving Convolutional Neural Networks using Genetic Programming*
Abigail McGhie, Bing Xue and Mengjie Zhang

9:18AM *Evolutionary Design of Long Short Term Memory (LSTM) Ensemble*
Ramya Anasseriyil Viswambaran, Gang Chen, Bing Xue and Mohammad Nekooei

CIVTS: Intelligent Computing and Management for Vehicles and Transportation System/Automatic Recognition and Machine Learning for Vehicles, Chair: Xian Wei Yi Lu Murphey, Room: Room 5

8:48AM *Unsupervised Patterns of Driver Mental Fatigue State Based on Head Posture Using Gaussian Mixture Model*
Shahzeb Ansari, Haiping Du, Fazel Naghdy and David Stirling

8:54AM *A machine-learning framework for a novel 3-step approach for real-time taxi dispatching*
Sparsh Agrawal

9:00AM *Causal Effects of Landing Parameters on Runway Occupancy Time using Causal Machine Learning Models*
Zhi Jun Lim, Imen Dhief, Sim Kuan Goh and Sameer Alam

9:06AM *Pose Based Action Recognition of Vulnerable Road Users Using Recurrent Neural Networks*
Viktor Kress, Steven Schreck, Stefan Zernetsch, Konrad Doll and Bernhard Sick

9:12AM *SIMP3: Social Interaction-Based Multi-Pedestrian Path Prediction By Self-Driving Cars*
Nora Muscholl, Atanas Poibrenski, Matthias Klusch and Patrick Gebhard

9:18AM *A Fleet Learning Architecture for Enhanced Behavior Predictions during Challenging External Conditions*
Florian Wirthmueller, Marvin Klimke, Julian Schlechtriemen, Jochen Hipp and Manfred Reichert

ESCO2: Multi-Objective Scheduling/Production Scheduling, Chair: Yi Mei, Room: Room 6

8:48AM *A Tailored NSGA-III for Multi-objective Flexible Job Shop Scheduling*
Yali Wang, Bas van Stein, Thomas Baeck and Michael Emmerich

8:54AM *D-MAENS2: A Self-adaptive D-MAENS Algorithm with Better Decision Diversity*
Qingquan Zhang, Feng Wu, Yang Tao, Jiyuan Pei, Jialin Liu and Xin Yao

9:00AM *Simulated Annealing for Single and Mixed Model Assembly Line Balancing with Setups*
Asef Nazari, Dhananjay Thiruvady, Atabak Elmi and Jean-Guy Schneider

9:06AM *Economic-Environmental Scheduling of Community Microgrid using Evolutionary Algorithm*
Md Juel Rana, Forhad Zaman, Tapabrata Ray and Ruhul Sarker

9:12AM *Memetic Algorithm for Heterogeneous Project Scheduling Problems*
Firoz Mahmud, Forhad Zaman, Ruhul Sarker and Daryl Essam

9:18AM *A GPHH with Surrogate-assisted Knowledge Transfer for Uncertain Capacitated Arc Routing Problem*
Mazhar Ansari Ardeh, Yi Mei and Mengjie Zhang

CIDM3: Classification/Knowledge Discovery, Chair: Brijesh Verma Bing Xue, Room: Room 7

8:48AM *Averaging Methods using Dynamic Time Warping for Time Series Classification*
Shreyasi Datta, Chandan Karmakar and Marimuthu Palaniswami

8:54AM *A Novel Method Based on Convolutional Features with Non-Iterative Learning for Brain Tumor Classification*
Toshi Sinha and Brijesh Verma

9:00AM *Evaluating Nonlinear Decision Trees for Binary Classification Tasks with Other Existing Methods*
Yashesh Dhebar, Sparsh Gupta and Kalyanmoy Deb

9:06AM *End-to-end electroencephalogram (EEG) motorimagery classification with Long Short-TermMemory (LSTM) Neural Networks*
Charles Leon-Urbano and Willy Ugarte

9:12AM *A GA-Based Approach to Fine-Tuning BERT for Hate Speech Detection*
Kosisochukwu Judith Madukwe, Xiaoying Gao and Bing Xue

9:18AM *Cross Domain Collaborative Filtering Recommender System for Academic Venue Personalization based on References*
Abir Zawali and Imen Boukhris

CIIoT3: Smart Cities/Management/Energy, Chair: Amir H. Gandomi Mohammad S. Khan, Room: Room 8

8:48AM *Vision-based Vehicle Detection and Distance Estimation*
Donghao Qiao and Farhana Zulkernine

8:54AM *Impact of Data Quality and Target Representation on Predictions for Urban Bus Networks*
Thilo Reich, Marcin Budka and David Hulbert

9:00AM *Financial time-series analysis of Brazilian stock market using machine learning*
Fernando Garcia Diniz Campos Ferreira, Amir H. Gandomi and Rodrigo Tomas Nogueira Cardoso

9:06AM *Selection of Apt Renewable Energy Source for Smart Cities using Generalized Orthopair Fuzzy Information*
R. Krishankumar, V. Sangeetha, Pratibha Rani, K. S. Ravichandran and Amir H. Gandomi

9:12AM *Optimally designed Variational Autoencoders for Efficient Wind Characteristics Modelling*
Srinivas Soumitri Miriyala, Subhankar Chowdhury, NagaSree Keerthi Pujari and Kishalay Mitra

9:18AM *Autonomous Vehicle Control Using Particle Swarm Optimization in a Mixed Control Environment*
Na'Shea Wiesner, John Sheppard and Brian Haberman

Friday, December 4, 9:36AM-10:12AM

AUQ: Uncertainty quantification (models and applications), Chair: Abbas Khosravi Saeid Nahavandi, Room: Room 1

9:36AM *Uncertainty quantification using Auto-tuned Surrogates of CFD model Simulating Supersonic flow over tactical missile body*
Srinivas Soumitri Miriyala, Raja Banerjee and Kishalay Mitra

9:42AM *Uncertainty Quantification of Bearing Remaining Useful Life Based on Convolutional Neural Network*
Huanjie Wang, Xiwei Bai and Jie Tan

9:48AM *Convolutional Neural Network for Blur Images Detection as an Alternative for Laplacian Method*
Tomasz Szandala

9:54AM *Mild Cognitive Impairment Diagnosis and Detecting Possible Labeling Errors in Alzheimer's Disease with an Unsupervised Learning-based Approach*
Gabriel Lima, Rodrigo Monteiro, Paulo Rocha, Anthony Lins and Carmelo Bastos-Filho

10:00AM *Optimization of Fund Periodic Investment Strategy Considering Frequency, Time Scale and Dynamic Payments*
Ziyun Zeng and Huimiao Chen

10:06AM *Adapting the Particle Filter Algorithm for the Street Navigation of the Visually Impaired*
Desmond Wong, Felix Wong and Vincent W.L. Tam

NICE2: Nature-Inspired Computation in Engineering/IComp: Immune Algorithms (Models and Applications), Chair: Xin-She Yang Wenjian Luo, Room: Room 2

9:36AM *Large-Scale Discrete Constrained Black-Box Optimization Using Radial Basis Functions*
Rommel Regis

9:42AM *A Comparative Study on Genetic Algorithm and Ant Colony Optimization in Resource Location Optimization*
Hang Zhou and Xiao-Bing Hu

9:48AM *An Artificial Immune System for Adaptive Test Selection*
Lukas Rosenbauer, Anthony Stein and Joerg Haehner

9:54AM *NDBIris with Better Unlinkability*
Dongdong Zhao, Xiaoyan Zhou, Jianwen Xiang and Wenjian Luo

10:00AM *Further Exploration of Necrotic Control of Evolved Art*
Ashlock Daniel and Greensmith Julie

10:06AM *Exploring Dimensionality Reduction Techniques for Efficient Surrogate-Assisted Optimization*
Sibghat Ullah, Duc Anh Nguyen, Hao Wang, Stefan Menzel, Bernhard Sendhoff and Thomas Back

ETHAI: Ethical, Social and Legal Implications, Chair: Keeley Crockett Matt Garratt, Room: Room 4

9:36AM *We Are Not Pontius Pilate: Acknowledging Ethics and Policy*
James Hughes, William Hannah, Peter Kikkert, Barry MacKenzie, Wendy Ashlock, Sheridan Houghten, Daniel Ashlock, Matthew Stoodley, Michael Dube, Rachel Brown and Amanda Saunders

9:42AM *Data Donations for Mapping Risk in Google Search of Health Queries: A case study of unproven stem cell treatments in SEM*
Martin Reber, Tobias D. Krafft, Roman Krafft, Katharina A. Zweig and Anna Couturier

9:48AM *The Crucial Role of Sensitive Attributes in Fair Classification*
Maryam Amir Haeri and Katharina Anna Zweig

9:54AM *Survey on Copyright Laws about Music Generated by Artificial Intelligence*
Munir Makhmutov, Selina Varouqa and Joseph Alexander Brown

10:00AM *A Survey on Ethical Principles of AI and Implementations*
Jianlong Zhou, Fang Chen, Adam Berry, Mike Reed, Shujia Zhang and Siobhan Savage

10:06AM *Considerations for Assuring Software Systems of Autonomous Aircraft*
Zena Assaad, Noel Derwort and Katherine Daniell

SNCC2: Neural Information Coding, Decoding & Learning/Supervised and Unsupervised Learning/Neuromorphic Sensors and Hardware, Chair: Jayawan Wijekoon Qiang Yu, Room: Room 5

9:36AM *Coding and Decoding Speech using a Biologically Inspired Coding System*
Madhurananda Pahar and Leslie Smith

9:42AM *Connective Potential Information for Collectively Interpreting Multi-Layered Neural Networks*
Ryotaro Kamimura and Ryotaro Kamimura

9:48AM *A Silicon Neuron-based Bio-Front-End for Ultra Low Power Bio-Monitoring at the Edge*
Shivangi TP Shivangi TP, Masoumeh Rahimi, Gaetano Gargiulo, Binsu J Kailath and Tara Julia Hamilton

9:54AM *An Event-Driven Object Recognition Model Using Activated Connected Domain Detection*
Tang Tang, Runhao Jiang, Rui Yan and Huajin Tang

10:00AM *Association Rule Mining Based Algorithm for Recovery of Silent Data Corruption in Convolutional Neural Network Data Storage*
Mohammadreza Ramzanpour and Simone Ludwig

10:06AM *Auto-tuned Deep Recurrent Neural Networks for Application in Wind Energy Conversion Systems*
NagaSree Keerthi Pujari, Srinivas Soumitri Miriyala and Kishalay Mitra

CIDM4: Clustering/Classification, Chair: Zhen Ni, Room: Room 7

9:36AM *E-DBSCAN: An evidential version of the DBSCAN method*
Malek Bessrour, Zied Elouedi and Eric Lefevre

9:42AM *Statistical Comparative Analysis and Evaluation of Validation Indices for Clustering Optimization*
Thy Nguyen, Jason Viehman, Dacosta Yeboah, Gayla Olbricht and Tayo Obafemi-Ajayi

9:48AM *Entropy-based Recognition of Anomalous Answers for Efficient Grading of Short Answers with an Evolutionary Clustering Algorithm*
Andrew Kwok-Fai Lui, Sin-Chun Ng and Stella Wing-Nga Cheung

9:54AM *Decoding of Subjective Pain-Sensitivity by Brain Signal Analysis Using a General Type-2 Fuzzy Classifier*
Sayantani Ghosh, Mousumi Laha, Amit Konar and Atulya. K Nagar

10:00AM *Assessment of Subjective Creativity Skill Using EEG Induced Capsule Network*
Sayantani Ghosh, Lidia Ghosh, Amit Konar and Atulya K. Nagar

10:06AM *Active learning with RESSPECT: Resource allocation for extragalactic astronomical transients*
Noble Kennamer, Emille Ishida, Santiago Gonzalez-Gaitan, Rafael De Souza, Alex Ihler, Kara Ponder, Ricardo Vilalta, Anais Moller, David Jones, Mi Dai, Alberto Krone-Martins, Bruno Quint, Sreevarsha Sreejith, Alex Malz and Lluis Galbany

ESCO3: Automated Heuristic Design, Chair: Liang Gao, Room: Room 8

9:36AM *Combined Selection and Parameter Control of Meta-heuristics*
Dmytro Pukhkaiev, Yevhenii Semendiak, Sebastian Goetz and Uwe Assmann

9:42AM *Exploring Reward-based Hyper-heuristics for the Job-shop Scheduling Problem*
Erick Lara-Cardenas, Arturo Silva-Galvez, Jose Carlos Ortiz-Bayliss, Ivan Amaya, Jorge M. Cruz-Duarte and Hugo Terashima-Marin

9:48AM *A Genetic Programming Hyper-Heuristic Approach to Design High-Level Heuristics for Dynamic Workflow Scheduling in Cloud*
Kirita-Rose Escott Escott, Hui Ma and Gang Chen

9:54AM *Optimal Lagrangian Multipliers for the Multidimensional Knapsack Problem: a Bayesian Optimisation Approach*
Hanyu Gu

10:00AM *Scalable Partial-ACO Applied to Fleet Optimisation: Sampling and Multi-Colony Approaches*
Darren Chitty

10:06AM *Evolutionary Algorithm with Non-sequential Chromosome Decoder for the Vehicle Routing Problem*
Connor Gregor

Friday, December 4, 7:00PM-9:00PM

Panel Session: Women in Computational Intelligence, Chair: Keeley Crockett, On Zoom. Register for this event at https://www.eventbrite.com.au/e/women-in-computational-intelligence-keynote-canberra-ai-week-tickets-128101612371