**Tutorial T2: Recent Advances in Evolutionary Multi-Criterion Optimization**  
*Monday, November 27, 8:30AM-10:30AM, Room: Honolulu 1 (Tapa Tower), Instructor: Kalyanmoy Deb*

**Tutorial T13: Estimation of distribution: Basic and advanced topics**  
*Monday, November 27, 8:30AM-10:30AM, Room: Honolulu 2 (Tapa Tower), Instructor: Jose A. Lozano*

**Tutorial T3: JIDT: An information-theoretic toolkit for studying the dynamics of complex systems**  
*Monday, November 27, 8:30AM-10:30AM, Room: Honolulu 3 (Tapa Tower), Instructor: Joseph Lizier*

**Tutorial T9: A Gentle Introduction to the Time Complexity Analysis of Evolutionary Algorithms**  
*Monday, November 27, 8:30AM-10:30AM, Room: Iolani 5-6 (Tapa Tower), Instructor: Pietro Oliveto*

**Session FOCI1: Foundations of Computational Intelligence I**  
*Monday, November 27, 8:30AM-10:30AM, Room: Iolani 3-4 (Tapa Tower), Chair: Manuel Ojeda/Leonardo Franco*

8:30AM  *A Fuzzy Based Lagrangian Twin Parametric-Margin Support Vector Machine (FLTPMSVM)*  
Deepak Gupta, Parashjyoti Borah and Mukesh Prasad  
NIT Arunachal Pradesh, Yupia, India; University of Technology Sydney, Sydney, Australia, Australia

9:00AM  *On the properties of measure in the theory of intermediate quantifiers and the quantifier "Many"*  
Vilem Novak and Petra Murinova  
University of Ostrava, IRAFM, Czech Republic

9:30AM  *Testing Properties of Fuzzy Connectives and Truth Degrees with the LatticeMaker Tool*  
Juan Antonio Guerrero, Gines Moreno, Felix Mendieta, Jaime Penabad and Jose Antonio Riaza  
University of Castilla-La Mancha, Spain

10:00AM  *Galois connections in Computational Intelligence: a short survey*  
Inna P. Cabrera, Pablo Cordero and Manuel Ojeda-Aciego  
Universidad de Malaga, Spain
Session IA1: Computational Intelligence on Intelligent Agents I  
Monday, November 27, 8:30AM-10:30AM, Room: Nautilus (Kalia Tower), Chair: Anna Lawniczak, /Alessandra Alaniz Macedo

8:30AM  Unsupervised Learning of Fundamental Emotional States via Word Embeddings [#1055]  
  Mirko Mazzoleni, Gabriele Maroni and Fabio Previdi  
  University of Bergamo, Italy

9:00AM  A Holistic Agent Based Model for Demography [#1727]  
  Karandeep Singh and Chang-Won Ahn  
  Korea University of Science and Technology (UST), ETRI, Korea (South)

9:30AM  Particle Swarm Optimization Based Co-Operative Task Assignment and Path Planning for Multi-Agent System [#1135]  
  Sumana Biswas, Sreenatha G. Anavatti and Matthew A. Garratt  
  The University of New South Wales (UNSW), Australia

10:00AM  A Decision Heuristic for Monte Carlo Tree Search Doppelkopf Agents [#1334]  
  Alexander Dockhorn, Christoph Doell, Matthias Hewelt and Rudolf Kruse  
  Otto-von-Guericke-University of Magdeburg, Germany

Session CIFEr1: Computational Intelligence for Financial Engineering & Economics I  
Monday, November 27, 8:30AM-10:30AM, Room: Lehua (Kalia Tower), Chair: Rui Jorge Almeida

8:30AM  A Comparative Study of A Recurrent Neural Network and Support Vector Machine for Predicting Price Movements of Stocks of Different Volatilities [#1583]  
  Zhixi Li and Vincent Tam  
  Dept. of EEE, HKU, Hong Kong

9:00AM  Extraction of sentences concerning business performance forecast and economic forecast from summaries of financial statements by deep learning [#1609]  
  Shiori Kitamori, Hiroyuki Sakai and Hiroki Sakaji  
  Seikei University, Japan; University of Tokyo, Japan

9:30AM  A Deep Learning based Stock Trading Model with 2-D CNN Trend Detection [#1346]  
  Ugur Gudelek, Arda Boluk and Murat Ozbayoglu  
  TOBB University of Economics and Technology, Turkey

10:00AM  Combining the Real-Time Wavelet Denoising and Long-Short-Term-Memory Neural Network for Predicting Stock Indexes [#1149]  
  Zhixi Li and Vincent Tam  
  Department of Electrical and Electronic Engineering, HKU, Hong Kong

Session CIHLI1: Computational Intelligence for Human-like Intelligence I  
Monday, November 27, 8:30AM-10:30AM, Room: Kahi li (Kalia Tower), Chair: Janusz Starzyk  / Adrian Horzyk

8:30AM  Designing a Multilingual Virtual Agent Capable of Interacting with Uneducated People for Automated Data Collection [#1069]  
  Anurag Bhandari, Nishith Pathak, Shivam Singh and Sanjay Podder  
  Accenture Technology Labs, India

9:00AM  Radiation heat transfer optimization by the use of modified ant lion optimizer [#1107]  
  Kamil Ksiazek, Dawid Polap, Marcin Woźniak and Robertas Damasevicius  
  Institute of Mathematics, Silesian University of Technology, Kaszubsksa 23, 44-100 Gliwice, Poland; Software Engineering Department, Kaunas University of Technology, Studentu 50, 51368 Kaunas, Lithuania

9:30AM  A Robot Model in Limited Scenarios to Create a Suitable Decision-making Criterion by Interacting with People in a Group [#1284]  
  Yotaro Fuse, Hiroshi Takenouchi and Masataka Tokumaru  
  Graduate School of Kansai University, Japan; Fukuoka Institute of Technology, Japan; Kansai University, Japan
10:00AM Motion Generation of Multi-Legged Robot in Complex Terrains by using Estimation of Distribution Algorithm [#1757]
Min Jiang, Zhongqiang Huang, Guiying Jiang, Minghui Shi and Xiangxiang Zeng
Xiamen University, China; Sangfor Technologies Company, China

Session CICARE1: Computational Intelligence in Healthcare and E-Health I
Monday, November 27, 8:00AM-10:30AM, Room: Hibiscus 1 (Kalia Tower), Chair: Ahsan Adeel

8:30AM Skin Lesion Segmentation: U-Nets versus Clustering [#1032]
Bill S. Lin, Kevin Michael, Shivam Kaira and H.R. Tizhoosh
University of Waterloo, Canada

9:00AM Using Recurrent Neural Networks to Predict Colorectal Cancer among Patients [#1066]
Ryan Amirkhan, Mark Hoogendoorn, Mattijs Numans and Leon Moons
Vrije Universiteit Amsterdam, Netherlands; LUMC, Netherlands; UMC Utrecht, Netherlands

9:30AM Mining Data on Traumatic Brain Injury with Reconstructability Analysis [#1095]
Martin Zwick, Nancy Carney and Rosemary Nettleton
Portland State University, United States; Oregon Health and Science University, United States

10:00AM Heart-Disease Diagnosis Decision Support Employing Fuzzy Systems with Genetically Optimized Accuracy-Interpretability Trade-Off [#1101]
Marian B. Gorzalczany and Filip Rudzinski
Kielce University of Technology, Department of Electrical and Computer Engineering, Poland

Tutorial T8: Recent Advances in Decomposition based Multi-objective and Many-objective Evolutionary Algorithms
Monday, November 27, 10:45AM-12:45PM, Room: Honolulu 1 (Tapa Tower), Instructor: Dipti Srinivasan

Tutorial T1: Deep Learning using Improved performance in MLP and its potential applications
Monday, November 27, 10:45AM-12:45PM, Room: Honolulu 2 (Tapa Tower), Instructor: B. Chandra

Tutorial T5: Finding and Exploiting Hidden Symmetry and Hierarchical Structure in Complex Adaptive Systems
Monday, November 27, 10:45AM-12:45PM, Room: Honolulu 3 (Tapa Tower), Instructor: Chrystopher Nehaniv

Tutorial T12: Machine Learning for the Quantified Self
Monday, November 27, 10:45AM-12:45PM, Room: Iolani 5-6 (Tapa Tower), Instructor: Mike Hoogendoor

Session FOCI2: Foundations of Computational Intelligence II
Monday, November 27, 10:45AM-12:45PM, Room: Iolani 3-4 (Tapa Tower), Chair: Manuel Ojeda/Leonardo Franco

10:45AM Generating Random Fuzzy (Capacity) Measures for Data Fusion Simulations [#1503]
Timothy Havens and Anthony Pinar
Michigan Technological University, United States

11:15AM On F-transforms, L-fuzzy partitions and L-fuzzy pretopological spaces [#1320]
Irina Perfilieva, Anand. P Singh and S. P. Tiwari
University of Ostrava, IRAFM, Czech Republic; Indian Institute of Technology (ISM), India

11:45AM Interpreting and analyzing a location-Based Social Network by Fuzzy Formal Contexts [#1517]
Jesus Medina, Kristina Pakhomova and Eloisa Ramirez-Poussa
University of Cadiz, Spain; Siberian Federal University, Russia

12:15PM  Modelling Fuzzy Partitions with Fuzzy Answer Sets [#1563]
Nicolas Madrid and Manuel Ojeda-Aciego
Universidad de Malaga, Spain

Session IA2: Computational Intelligence on Intelligent Agents II
Monday, November 27, 10:45AM-11:45AM, Room: Nautilus (Kalia Tower), Chair: Rudolf Kruse/Matthew Garratt

10:45AM  Decisions and Success of Heterogeneous Population of Agents in Learning to Cross a Highway [#1572]
Anna Lawniczak and Fei Yu
University of Guelph, Canada

11:15AM  Coevolutionary Multi-agent Optimization of Distributed Supply Networks [#1683]
Raj Subbu
Pratt and Whitney, United States

Session CIFEr2: Computational Intelligence for Financial Engineering & Economics II
Monday, November 27, 10:45AM-12:45PM, Room: Lehua (Kalia Tower), Chair: Kazi Shah Nawaz Ripon

10:45AM  A Parallel Firefly Meta-heuristics Algorithm for Financial Option Pricing [#1290]
Kevin Mather, Parimala Thulasiraman, Ruppa Thulasiram and Sujata Dash
University of Manitoba, Canada

11:15AM  Liquidity Risk and Asset Movement Evidence from Brexit [#1045]
Damini Mago, Amin Salighehdar, Mansi Parekh, Drago Buzdog and Ionut Florescu
Stevens Institute of Technology, United States

11:45AM  Predicting Credit Risk in Peer-to-Peer Lending with Survival Analysis [#1207]
Ajay Byanjankar
Abo Akademi University, Finland

12:15PM  Detection of Rare Events in Multidimensional Financial Datasets with Zonoid Depth Functions [#1287]
Parisa Golbayani and Drago Buzdog
Stevens Institute of Technology, United States

Session CIHLI2: Computational Intelligence for Human-like Intelligence II
Monday, November 27, 10:45AM-12:45PM, Room: Kahili (Kalia Tower), Chair: Min Jiang / Faiyaz Doctor

10:45AM  Lung segmentation on x-ray images with neural validation [#1108]
Dawid Polap and Marcin Wozniak
Institute of Mathematics, Silesian University of Technology, Kaszubska 23, 44-100 Gliwice, Poland

11:15AM  Supervised Deep Actor Network for Imitation Learning in a Ground-Air UAV-UGVs Coordination Task [#1687]
Hung Nguyen, Matthew Garratt, Lam Bui and Hussein Abbass
UNSW-Canberra, University of New South Wales, Australia; Le Quy Don Technical University, Viet Nam

11:45AM  Bio-Acoustic Emotion Recognition using Continuous Conditional Recurrent Neural Fields [#1743]
Ntombikayise Banda, Lang He and Andries Engelbrecht
University of Cambridge, United Kingdom; Northwestern Polytechnical, China; University of Pretoria, South Africa
Session CICARE2: Computational Intelligence in Healthcare and E-Health II
Monday, November 27, 10:45AM-12:45PM, Room: Hibiscus 1 (Kalia Tower), Chair: Summrina Kanwal Wajid

10:45AM Automated Detection, Extraction and Counting of Acne Lesions for Automatic Evaluation and Tracking of Acne Severity [#1204]
Gabriele Maroni, Michele Ermidoro, Fabio Previdi and Glaucio Bigini
University of Study of Bergamo, Italy; E-Novia S.p.A., Italy

11:15AM Enhancing Exercise Experience with Individual Multi-Emotion Provoking Game Elements [#1211]
Larissa Mueller, Arne Bernin, Kai von Luck, Andreas Kamenz, Sobin Ghose, Qi Wang, Christos Grecos and Florian Vogt
University of Applied Sciences (HAW), Germany; University of the West of Scotland, Scotland; Central Washington University (CWU), United States; Innovations Kontakt Stelle (IKS), Germany

11:45AM Fast Deformable Model for Pedestrian Detection with Haar-like Features [#1213]
Kuang-Pen Chou, Mukesh Prasad, Deepak Puthal, Ping-Hung Chen, Dinesh Kumar Vishwakarma, Suresh Sundaram, Chin-Teng Lin and Wen-Chieh Lin
National Chiao Tung University, Taiwan; University of Technology Sydney, Australia; Delhi Technological University, India; Nanyang Technological University, Singapore

12:15PM A novel brain-inspired compression-based optimised multimodal fusion for emotion recognition [#1676]
Mandar Gogate, Ahsan Adeel and Amir Hussain
University of Stirling, United Kingdom

Plenary Talk P-IA: Intelligent Agent for Human and Machine Co-Learning on Game of Go
Monday, November 27, 11:45AM-12:45PM, Room: Nautilus (Kalia Tower), Speaker: Chang-Shing Lee

Tutorial T7: Evolutionary Computation for Dynamic Multiobjective Optimization Problems
Monday, November 27, 2:00PM-4:00PM, Room: Honolulu 1 (Tapa Tower), Instructor: Shengxiang Yang

Tutorial T4: Evolution of Neural Networks
Monday, November 27, 2:00PM-4:00PM, Room: Honolulu 2 (Tapa Tower), Instructor: Risto Miikkulaine

Tutorial T10: How to obtain good and diverse solutions (in game AI optimization and other real world problems)
Monday, November 27, 2:00PM-4:00PM, Room: Honolulu 3 (Tapa Tower), Instructor: Mike Preuss

Tutorial T6: Physics of the Mind
Monday, November 27, 2:00PM-4:00PM, Room: Iolani 5-6 (Tapa Tower), Instructor: Leonid Perlovsky

Session FOCI3: Foundations of Computational Intelligence III
Monday, November 27, 2:00PM-4:00PM, Room: Iolani 3-4 (Tapa Tower), Chair: Leonardo Franco

2:00PM P-Tree Programming [#1102]
Christian Oesch
University of Basel, Switzerland

2:30PM Kansei clothing retrieval system using features extracted by autoencoder [#1584]
Shigeru Ota, Hiroshi Takenouchi and Masataka Tokumaru
Science and Engineering graduate school of Kansai University, Japan; Department of System Management Fukuoka Institute of Technology, Japan; Faculty of Engineering Science Kansai University, Japan

3:00PM A Fully Recursive Perceptron Network Architecture [#1590]
Markus Hagenbuchner, Ah Chung Tsoi, Franco Scarselli and Shu Jia Zhang
University of Wollongong, Australia; Chu Hai College of Higher Education, Hong Kong; University of Siena, Italy

3:30PM Strictly join irreducible elements in the lattice of varieties of BL-algebras [#1653]
Matteo Bianchi
Università degli Studi dell’Insubria, Italy

Session CIFEr3: Computational Intelligence for Financial Engineering & Economics III
Monday, November 27, 2:00PM-4:00PM, Room: Lehua (Kalia Tower), Chair: Michael Kampouridis

2:00PM Entropy Based Measure Sentiment Analysis in the Financial Market [#1352]
Qiang Song, Saud Almahdi and Steve Y. Yang
Stevens Institute of Technology, United States

2:30PM Comparative Text Analytics via Topic Modeling in Banking [#1234]
Yu Chen, Rhaad M. Rabbani, Aparna Gupta and Mohammed J. Zaki
Rensselaer Polytechnic Institute, United States

3:00PM Development of Sentiment Indicators Using both Unlabeled and Labeled Posts [#1197]
Tomoki Ito, Hiroki Sakaji, Kiyoshi Izumi, Kota Tsubouchi and Tatsuo Yamashita
The University of Tokyo, Japan; Yahoo Japan Corporation, Japan

3:30PM Online Portfolio Selection Based on the Posts of Winners and Losers in Stock Microblogs [#1177]
Shinta Koyano and Kazushi Ikeda
Nara Institute of Science and Technology, Japan; NARA Institute of Science and Technology, Japan

Session CIHLI3: Computational Intelligence for Human-like Intelligence III
Monday, November 27, 2:00PM-4:30PM, Room: Kahili (Kalia Tower), Chair: Marcin Wozniak / Min Jiang

2:00PM Ambiguity Aversion and a Decision-Theoretic Framework Using Belief Functions [#1028]
Radim Jirousek and Prakash P. Shenoy
Faculty of Management, University of Economics, Prague, Czech Republic; School of Business, University of Kansas, Lawrence, KS, United States

2:30PM Letter Position Encoding in a Neural Framework [#1377]
Ryan Stokes and Gregory Hickok
University of California, Irvine, United States

3:00PM Fast Neural Network Adaptation with Associative Pulsing Neurons [#1663]
Adrian Horzyk and Janusz A. Starzyk
AGH University of Science and Technology, Dept. Automatics and Biomedical Engineering, Poland; University of Information Technology and Management in Rzeszow and School of EECS, Ohio University, United States

3:30PM Lumped Mini-Column Associative Knowledge Graphs [#1725]
Basawaraj Basawaraj, Janusz A. Starzyk and Adrian Horzyk
Ohio University, School of EECS, United States; Ohio University, School of EECS and University of Information Technology and Management in Rzeszow, United States; AGH University of Science and Technology, Dept. Automatics and Biomedical Engineering, Poland

Session CICARE3: Computational Intelligence in Healthcare and E-Health III
Monday, November 27, 2:00PM-4:30PM, Room: Hibiscus 1 (Kalia Tower), Chair: Erik Cambria
2:00PM  Predicting Extubation Readiness in Extreme Preterm Infants based on Patterns of Breathing
[1472]
Charles C. Onu, Lara J. Kanbar, Wissam Shalish, Karen Brown, Guilherme M. Sant’Anna,
Robert E. Kearney and Doina Precup
McGill University, Canada

2:30PM  Chronic Disease Risk Monitoring Based on an Innovative Predictive Modelling Framework
[1475]
Nitten Rajjiwall, Rachel Davey and Girija Chetty
University of Canberra, Australia

3:00PM  Cognitive Relevance [1485]
George Shannon, James Levett, Corns Steve and Wunsch Donald
Missouri University of Science and Technology, United States; Physician’s Clinic of Iowa,
United States

3:30PM  Employing Sentiment-based Affinity and Gravity Scores to Identify Relations of Medical Concepts [1507]
Anupam Mondal, Erik Cambria, Dipankar Das and Sivaji Bandyopadhyay
Department of Computer Science and Engineering, Jadavpur University, India; School of
Computer Science and Engineering, Nanyang Technological University, Singapore

4:00PM  PHIs (Protected Health Information) Identification From Free Text Clinical Records Based on Machine Learning [1521]
Kunal Rajput, Girija Chetty and Rachel Davey
University of Canberra, Australia

Tutorial T14: Computational Intelligence in User Identity Management
Tuesday, November 28, 8:30AM-10:30AM, Room: Honolulu 1 (Tapa Tower), Instructor:
Dipankar Dasgupta and Abhijit Nag

Session CIDM1: Special Session: Computational Intelligence and Financial Engineering: Now and Future
Tuesday, November 28, 8:30AM-9:30AM, Room: Honolulu 2 (Tapa Tower), Chair: Mu Yen Chen
and An-Pin Chen

8:30AM  Predicting Cryptocurrency Price Bubbles Using Social Media Data and Epidemic Modelling [1037]
Ross Phillips and Denise Gorse
University College London, United Kingdom

9:00AM  Tensor Representation in High-Frequency Financial Data for Price Change Prediction [1040]
Dat Thanh Tran, Magris Martin, Juho Kanniainen, Moncef Gabbouj and Alexandros Iosifidis
Tampere University of Technology, Finland; Aarhus University, Denmark

Session SIS1: Single objective bound constrained optimization
Tuesday, November 28, 8:30AM-10:30AM, Room: Honolulu 3 (Tapa Tower), Chair: Haibin Duan

8:30AM  Chaotic Predator-Prey Brain Storm Optimization for Continuous Optimization Problems [1057]
Huaxin Qiu, Haibin Duan, Yuhui Shi, Ziwei Zhou and Xiaoguang Hu
Beihang University, China; Southern University of Science and Technology, China

9:00AM  Particle Swarm Optimization with A Modified Learning Strategy and Blending Crossover [1436]
Aditya Panda, Rammohan Mallipeddi and Swagatam Das
Jadavpur University, India; Kyungpook National University, Korea (South); Indian Statistical Institute, India

9:30AM  Firefly Optimization: A Study on Frame Invariance [1461]
Christopher W Cleghorn and Andries P Engelbrecht
University of Pretoria, Department Computer Science, South Africa

10:00AM Investigation of particles behaviors of piecewise-linear particle swarm optimizer
Tomoyuki Sasaki and Hidehiro Nakano
Shonan Institute of Technology, Japan; Tokyo City University, Japan

Session ADPRL1: Adaptive Dynamic Programming and Reinforcement Learning I
Tuesday, November 28, 8:30AM-10:30AM, Room: Iolani 5-6 (Tapa Tower), Chair: Qichao Zhang and Yuanheng Zhu

8:30AM Data-based Robust Near-Optimal Decentralized Stabilization of Unknown Large-Scale Systems
Bo Zhao, Derong Liu and Yuanchun Li
Institute of Automation, Chinese Academy of Sciences, China; Guangdong University of Technology, China; Changchun University of Technology, China

9:00AM Event-triggered integral reinforcement learning for nonlinear continuous-time systems
Zhang Qichao and Zhao Dongbin
Chinese Academy of Sciences, China

9:30AM Policy Iteration-based Indirect Adaptive Optimal Control for Completely Unknown Continuous-Time LTI Systems
Sumit Kumar Jha, Sayan Basu Roy and Shubhendu Bhasin
Indian Institute of Technology Delhi, New Delhi, India

10:00AM Model Predictive PseudoSpectral Optimal Control with Semi-Parametric Dynamics
Manan Gandhi, Kamil Saigol, Yunpeng Pan and Evangelos Theodorou
Georgia Institute of Technology, United States

Session CIFEr4: Computational Intelligence for Financial Engineering & Economics IV
Tuesday, November 28, 8:30AM-10:30AM, Room: Iolani 3-4 (Tapa Tower), Chair: Parimala Thulasiraman

8:30AM Why do Active Funds that Trade Infrequently Make a Market more Efficient? -- Investigation using Agent-Based Model
Takanobu Mizuta and Sadayuki Horie
SPARX Asset Management Co. Ltd., Japan; Nomura Research Institute, Ltd., Japan

9:00AM Income Allocation to Each Worker in Synthetic Populations Using Basic Survey on Wage Structure
Tadahiko Murata, Sugiuira Sho and Harada Takuya
Kansai University, Japan; Graduate School of Informatics, Kansai University, Japan

9:30AM Regression genetic programming for estimating trend end in foreign exchange market
Adesola Adegboye, Michael Kampouridis and Colin G. Johnson
University of Kent, United Kingdom

10:00AM Long-range autocorrelations in limit order book markets: inter- and cross-event analysis
Martin Magris, Jiyeong Kim, Esa Rasanen and Juho Kannaiinen
Tampere University of Technology, Finland

Plenary Talk P-CIES: On the Impact of Computational Intelligence on Structural Dynamics
Tuesday, November 28, 8:30AM-9:30AM, Room: Nautilus (Kalia Tower), Speaker: Keith Worden

Plenary Talk P-CIASG: Computational Intelligence - Research and Development In Power Industry
Tuesday, November 28, 8:30AM-9:30AM, Room: Lehua (Kalia Tower), Speaker: Ahmed Y. Saber
Plenary Talk P-CICARE: Sentic Computing
Tuesday, November 28, 8:30AM-9:30AM, Room: Kahili (Kalia Tower), Speaker: Erik Cambria

Session CIES1: Computational Intelligence for Engineering Solutions I
Tuesday, November 28, 9:30AM-10:30AM, Room: Nautilus (Kalia Tower), Chair: Michael Beer

9:30AM A Hybrid Evolutionary Algorithm and Cell Mapping Method for Multi-Objective Optimization Problems [#1049]
Jian-Qiao Jian and Oliver Schuetze
School of Engineering, University of California, Merced, United States; CINVESTAV-IPN, Depto de Computacion, Mexico

10:00AM Exploiting Gradient for Kriging-based Multi-Objective Aerodynamic Optimization [#1073]
Pramudita Palar and Koji Shimoyama
Tohoku University, Japan

Session CIASG1: Computational Intelligence Applications in Smart Grid I
Tuesday, November 28, 9:30AM-10:30AM, Room: Lehua (Kalia Tower), Chair: G. Kumar Venayagamoorthy

9:30AM Optimized Automatic Generation Control in a Multi-area Power System with Particle Swarm Optimization [#1686]
Iroshani Jayawardene, Yawei Wei and Kumar Venayagamoorthy
Clemson University, United States

Session CICS1: Computational Intelligence in Cyber Security I
Tuesday, November 28, 10:45AM-12:45PM, Room: Honolulu 1 (Tapa Tower), Chair: Marco Carvalho

10:45AM RDS3: Ransomware Defense Strategy by Using Stealthily Spare Space [#1092]
Kul Prasad Subedi, Daya Ram Budhathoki, Bo Chen and Dipankar Dasgupta
The University of Memphis, United States; Michigan Technological University, United States

11:15AM High Fidelity Adaptive Cyber Emulation [#1695]
Samir Mammadov, Dhanish Mehta, Evan Stoner and Marco Carvalho
Harris Institute for Assured Information, United States

11:45AM A Deep Neuro-Fuzzy method for multi-label malware classification and fuzzy rules extraction [#1005]
Andrii Shalaginov and Katrin Franke
Department of Information Security and Communication Technology, Faculty of Information Technology and Electrical Engineering, Norwegian University of Science and Technology, Norway

12:15PM Intrusion Detection of Multiple Attack Classes using a Deep Neural Net Ensemble [#1063]
Simone Ludwig
North Dakota State University, United States

Plenary Talk P-CIDM: Scalable Feature Selections and Its Applications
Tuesday, November 28, 10:45AM-11:45AM, Room: Honolulu 2 (Tapa Tower), Speaker: Gregory Ditzler

Session SIS2: Combinatorial Optimization
Tuesday, November 28, 10:45AM-12:45PM, Room: Honolulu 3 (Tapa Tower), Chair: Robert Green

10:45AM Integrated Particle Swarm and Evolutionary Algorithm Approaches to the Quadratic Assignment Problem [#1021]
Ayah Helal, Enas Jawdat, Islam Elabarawy, Ashraf Abdelbar and Donald Wunsch
University of Kent, United Kingdom; American University in Cairo, Egypt; Missouri University of Science and Technology, United States; Brandon University, Canada
11:15AM  A Formal Approach to Deriving Factored Evolutionary Algorithm Architectures [#1041]
Shane Strasser, John Sheppard and Stephyn Butcher
Montana State University, United States; Johns Hopkins University, United States

11:45AM  Evaluating Factored Evolutionary Algorithm Performance on Binary Deceptive Problems
 [#1425]
Shane Strasser and John Sheppard
Montana State University, United States

12:15PM  Neighborhood Topologies in Central Force Optimization [#1684]
Robert Green
Bowling Green State University, United States

Plenary Talk P-ADPRL: New Reinforcement Learning Structures for Real-Time Optimal Control and Differential Graphical Games: Applications to HRI and Industrial Process Control
Tuesday, November 28, 10:45AM-11:45AM, Room: Iolani 5-6 (Tapa Tower), Speaker: Frank Lewis

Session CIfEr5: Computational Intelligence for Financial Engineering & Economics V
Tuesday, November 28, 10:45AM-12:45PM, Room: Iolani 3-4 (Tapa Tower), Chair: Juho Kanniainen

10:45AM  Assessing the Impact of Self-Organizing Map on Genetic Fuzzy Set Hybrid Intelligent Systems for Financial Prediction [#1322]
Henning Kvalsund and Kazi Shah Nawaz Ripon
Norwegian University of Science and Technology, Norway; University of Science and Technology, Norway

11:15AM  Intraday Value-at-Risk Estimation for Directional Change Events and Investment Strategies [#1754]
Rui Jorge Almeida, Nalan Basturk and Robert Golan
Department of Quantitative Economics, Maastricht University, Netherlands; DBmind Technologies Inc., United States

11:45AM  Nation-Wide Synthetic Reconstruction Method [#1698]
Tadahiko Murata and Takuya Harada
Kansai University, Japan; Graduate School of Informatics, Kansai University, Japan

12:15PM  Discovery of Rare Causal Knowledge from Financial Statement Summaries [#1487]
Hiroki Sakaji, Risa Murono, Hiroyuki Sakai, Jason Bennett and Kiyoshi Izumi
The University of Tokyo, Japan; Seikei University, Japan; Sumitomo Mitsui Asset Management, Japan

Session CIES2: Computational Intelligence for Engineering Solutions II
Tuesday, November 28, 10:45AM-12:45PM, Room: Nautilus (Kalia Tower), Chair: Matteo Broggi

10:45AM  Applying Design Knowledge and Machine Learning to SCADA data for Classification of Wind Turbine Operating Regimes [#1240]
Braulio Barahona, Cyprien Hoelzl and Eleni Chatzi
ETH, Switzerland

11:15AM  Improving Performance of CDCL SAT Solvers by Automated Design of Variable Selection Heuristics [#1247]
Marketa Illetskova, Alex R. Bertels, Joshua M. Tuggle, Adam Harter, Samuel Richter, Daniel R. Tauritz, Samuel Mulder, Denis Bueno, Michelle Leger and William M. Siever
Missouri University of Science and Technology, United States; Sandia National Laboratories, United States; Washington University in St. Louis, United States

11:45AM  An Unsupervised K-means based Clustering Method for Geophysical Post-Earthquake Diagnosis [#1400]
Fernando Mato and Theoifilos Toulkeridis
Finding Near-Optimum and Diverse Solutions for a Large-Scale Engineering Design Problem

Abhinav Gaur, AKM Khaled Talukder, Kalyanmoy Deb, Santosh Tiwari, Simon Xu and Don Jones
Doctoral Student, Michigan State University, United States; Koenig Endowed Chair Professor, Michigan State University, United States; General Motors, United States

Session CIASG2: Computational Intelligence Applications in Smart Grid II
Tuesday, November 28, 10:45AM-12:45PM, Room: Lehua (Kalia Tower), Chair: Komla Folly

Simulation Evolution and Optimization for PV Solar Farm Configuration Under Weather and Soiling Uncertainty

Peng-Yeng Yin, Chun-Ying Cheng and Shang-Wei Chen
National Chi Nan University, Taiwan

Optimal Reconfiguration and Distributed Generator allocation in Distribution Network using an advanced Adaptive Differential Evolution

Partha Biswas, Rammohar Mallipeddi, Ponnuthurai Suganthan and Gahan Amaratunga
Nanyang Technological University, Singapore; Kyungpook National University, Korea (South); University of Cambridge, United Kingdom

Parallel Dependable Multi-population Differential Evolutionary Particle Swarm Optimization for On-line Optimal Operational Planning of Energy Plants

Norihiro Nishimura, Yoshikazu Fukuyama and Tetsuro Matsui
Meiji University, Japan; Fuji Electric, Japan

Self-Adaptive Differential Evolution Based Power System Stabilizers

Dereck Dombo and Komla Folly
University of Cape Town, South Africa

Session CICARE4: Computational Intelligence in Healthcare and E-Health V
Tuesday, November 28, 10:45AM-12:45PM, Room: Kahili (Kalia Tower), Chair: Erik Cambria

Using Matching Substructures as an Optimization Objective for RNA Design

David J. D. Hampson and Herbert H. Tsang
Trinity Western University, Canada

Brain Machine Interface for Useful Human Interaction Via Extreme Learning Machine and State Machine Design

Garrett Sargent, Haotian Zhang, Morgan Alyssa, Adam Van Camp, Arlen D’Arcy, Adam Cassidy, Theus Aspiras, Emma Romstedt, Victoria Dicillo and Vijayan Asari
University of Dayton, United States; Northrop Grumman, United States; NASIC, United States

Predicting Bedside Falls using Current Context

Asbjorn Danielsen and Bernt A. Bremdal
UiT - The Arctic University of Norway, Norway

A Comparative Study of CNN, BoVW and LBP for Classification of Histopathological Images

Meghana Dinesh Kumar, Morteza Babaie, Shujin Zhu, Shivam Kaira and Hamid Tizhoosh
University of Waterloo, Canada; Amirkabir University, Iran; Nanjing University of Science and Technology, China

Plenary Talk P-FOCI: Parameterized Analysis of Bio-inspired Computing
Tuesday, November 28, 10:45AM-11:45AM, Room: Hibiscus 1 (Kalia Tower), Speaker: Frank Neumann

Session ADPRL2: Adaptive Dynamic Programming and Reinforcement Learning II
Tuesday, November 28, 11:45AM-12:45PM, Room: Iolani 5-6 (Tapa Tower), Chair: K. G. Vamvoudakis and Avrimanyu Sahoo
11:45AM  ADP-based Adaptive Optimal Tracking of Strict-feedback Nonlinear Systems [#1076]
Weinan Gao and Zhong-Ping Jiang
Georgia Southern University, United States; New York University, United States

Avimanyu Sahoo, Vignesh Narayanan and Jagannathan Sarangapani
Oklahoma State University, United States; Missouri University of Science and Technology, United States

Session FOCI4: Foundations of Computational Intelligence IV
Tuesday, November 28, 11:45AM-12:45PM, Room: Hibiscus 1 (Kalia Tower), Chair: Pietro Oliveto / Leonardo Franco

11:45AM  An Approximate Ripple-Spreading Algorithm with Terminal h Strategy [#1014]
Xiao-Bing Hu, Ming-Kong Zhang and Jian-Qin Liao
Civil Aviation University of China, China; Beijing Normal University, China; Chengdu MidShare Technology Ltd, China

12:15PM  Tighter Upper Bound of Real Log Canonical Threshold of Non-negative Matrix Factorization and its Application to Bayesian Inference [#1039]
Naoki Hayashi and Sumio Watanabe
Tokyo Institute of Technology, Japan

Session CICS2: Computational Intelligence in Cyber Security II
Tuesday, November 28, 2:00PM-4:00PM, Room: Honolulu 1 (Tapa Tower), Chair: Dipankar Dasgupta

2:00PM  A Hybrid Approach to Improving Program Security [#1455]
Fitzroy Nembhard, Marco Carvalho and Thomas Eskridge
Florida Institute of Technology, United States

2:30PM  Malware Classification Using Static Analysis Based Features [#1738]
Mehadi Hassen, Marco Carvalho and Philip Chan
Florida Institute of Technology, United States

3:00PM  Towards Efficient Detection of Sybil Attacks in Location-based Social Networks [#1766]
Xu Zhiwei, Chen Bo, Meng Xuying and Liu Limin
College of Information Engineering, Inner Mongolia University of Technology; Institute of Computing Technology, Chinese Academy of Sciences, China; Department of Computer Science, Michigan Technological University, United States; Institute of Computing Technology, Chinese Academy of Sciences, China; College of Information Engineering, Inner Mongolia University of Technology; Institute of Computing Technology, China

Session CIDM2: Kernel Methods and Neural Networks
Tuesday, November 28, 2:00PM-4:00PM, Room: Honolulu 2 (Tapa Tower), Chair: Walter Bennette

2:00PM  Hyper-parameter Search in Support Vector Machines using PSO with Cellular Fitness Approximation [#1715]
Shinichi Yamada and Kourosh Neshatian
University of Canterbury, New Zealand

2:30PM  Super-Resolution for Sequence Series Data using Long-Short Term Memory Network [#1253]
Pak-Kan Wong, Man-Leung Wong and Kwong-Sak Leung
The Chinese University of Hong Kong, Hong Kong; Lingnan University, Hong Kong

3:00PM  Distance Metric Learning using Each Category Centroid with Nuclear Norm Regularization [#1246]
Kenta Mikawa, Manabu Kobayashi, Masayuki Goto and Shigeichi Hirasawa
Shonan Institute of Technology, Japan; Waseda University, Japan

3:30PM  Bilinear Generating Functions in Kernel Sparse Modeling and Learning [#1189]
A Cooperative Co-evolutionary LSHADE Algorithm for Large-Scale Global Optimization

Marwa Sharawi and Mohammed El-Abd
Arab Open University, Egypt; American University of Kuwait, Kuwait

The Merits of Velocity Clamping Particle Swarm Optimisation in High Dimensional Spaces

Elre Oldewage, Andries Engelbrecht and Christopher Cleghorn
Council for Scientific and Industrial Research, South Africa; University of Pretoria, South Africa

Differential Evolution with Center-based Mutation for Large-scale Optimization

Hanan Hanan Hiba, Sedigheh Mahdavi and Shahryar Rahnamayan
Department of Electrical, Computer, and Software Engineering University of Ontario Institute of Technology (UOIT), Canada

Particle Swarm Optimization for Large-Scale Clustering on Apache Spark

Sherar Matthew and Farhana Zulkernine
School of Computing, Queen's University, Canada

Cooperative Reinforcement Learning for Multiple Units Combat in StarCraft

Shao Kun, Zhu Yuanheng and Zhao Dongbin
Chinese Academy of Sciences, China

Gradient-Based Minimization for Multi-Expert Inverse Reinforcement Learning

Davide Tateo, Matteo Pirotta, Marcello Restelli and Andrea Bonarini
Politecnico di Milano, Italy

Efficient Actor-critic Algorithm with Dual Piecewise Model Learning

Shan Zhong, Quan Liu, Gong Shengrong, Fu Qiming and Xu Jin
Changshu Institute of Technology, China; Soochow University, China; Suzhou University of Science and Technology, China

Optimal Online Learning in Bidding for Sponsored Search Auctions

Donghun Lee, Piotr Ziolo, Weidong Han and Warren Powell
Princeton University, United States; Wizard Forms Ltd., Poland

Fault Diagnosis in Robot Swarms: An Adaptive Online Behaviour Characterisation Approach

James O'Keeffe, Danesh Tarapore, Alan Millard and Jon Timmis
University of York, United Kingdom; University of Southampton, United Kingdom

Flexibility through Autonomous Decision-making in Robot Swarms

Wayne Just and Melanie Moses
University of New Mexico, United States; University of New Mexico and Santa Fe Institute, United States

Achieving Long-Term Progress in Competitive Co-Evolution

Luca Simione and Stefano Nolfi
Institute of Cognitive Sciences and Technologies CNR, Italy
3:30PM Referential Communication as a Collective Property of a Brain-Body-Environment-Body-Brain System: A minimal cognitive model [1110]
Jorge I. Campos and Tom Froese
National Autonomous University of Mexico, Faculty of Higher Education Aragon, Mexico;
National Autonomous University of Mexico, Institute of Applied Mathematics and Systems Research, Mexico

Session CIES3: Computational Intelligence for Engineering Solutions III
Tuesday, November 28, 2:00PM-4:00PM, Room: Nautilus (Kalia Tower), Chair: Matteo Broggi

2:00PM Revealing Prediction Uncertainty in Artificial Neural Network Based Reconstruction of Missing Data In Stochastic Process Records utilizing Extreme Learning Machines [1543]
Liam Comerford, Michael Beer and Naiwei Lu
Leibniz University of Hannover, Germany; Changsha University of Science and Technology, China

2:30PM A P300 Brain Computer Interface based Intelligent Home Control System using a Random Forest Classifier [1773]
Usman Masud and Iram Baig
University of Engineering and Technology, Taxila, Pakistan

3:00PM How Accurate Are Expert Estimations of Correlation? [1009]
Michael Beer, Zitong Gong, Francisco Diaz De La O and Vladik Kreinovich
Leibniz University of Hannover, Germany; University of Liverpool, United Kingdom;
University of Texas at El Paso, United States

3:30PM Investigation of a flexible rotor system with squeeze film dampers by a combined numerical procedure [1539]
Qian Ding and Bingbing Han
Tianjin University, China

Session CIASG3: Computational Intelligence Applications in Smart Grid III
Tuesday, November 28, 2:00PM-4:00PM, Room: Lehua (Kalia Tower), Chair: Pedro Faria

2:00PM Clustering Optimization of Distributed Energy Resources in Support of an Aggregator [1371]
Joao Spinola, Ricardo Faia, Pedro Faria and Zita Vale
GECAD/IPP, Portugal

2:30PM Multi-Objective PSO for Scheduling Electricity Consumption in a Smart Neighborhood [1677]
Pramod Herath and Ganesh Venayagamoorthy
Clemson University, United States

3:00PM Energy Consumption Forecasting using Neuro-Fuzzy Inference Systems: Thales TRT building case study [1367]
Aria Jozi, Tiago Pinto, Isabel Praca, Sergio Ramos, Zita Vale, Benedicte Goujon and Petrisor Teodora
GECAD/IPP, Portugal; University of Salamanca, Spain; GECAD - Polytechnic of Porto, Portugal; Thales Research Technology France, France

3:30PM Lighting Consumption Optimization using Fish School Search Algorithm [1753]
Pedro Faria, Angelo Pinto, Fernando Buarque, Tiago Pinto, Zita Vale and Mahsa Khorram
Polytechnic of Porto, Portugal; University of Pernambuco, Brazil; University of Salamanca, Spain; Polytechnic of Porto, Portugal

Session FOCI5: Foundations of Computational Intelligence V
Tuesday, November 28, 2:00PM-4:00PM, Room: Hibiscus 1 (Kalia Tower), Chair: Pietro Oliveto / Leonardo Franco

2:00PM A Preliminary Study on Designing a Benchmark Problem for Analysis of Sparsely-Synchronized Heterogeneous Coevolution [1714]
Jun-ichi Matsuoka, Yuki Nakashima and Satoshi Ono
2:30PM Does Relaxing Strict Acceptance Condition Improve Test Based Pareto Coevolution? [#1736]
ATM Golam Bari, Alessio Gaspar, R. Paul Wiegand and Anthony Bucci
University of South Florida, United States; University of Central Florida, United States; 119 Amory St. Cambridge, MA, USA, United States

3:00PM Combining Top-Down and Bottom-Up Approaches for Automated Discovery of Typed Programs [#1382]
Tomas Kren, Josef Moudrik and Roman Neruda
Charles University, Faculty of Mathematics and Physics, Czech Republic; Institute of Computer Science, Academy of Sciences of the Czech Republic, Czech Republic

3:30PM Improved Runtime Analysis of RLS and (1+1) EA for the Dynamic Vertex Cover Problem [#1694]
Pourhassan Mojgan, Roostapour Vahid and Neumann Frank
Optimisation and Logistics, School of Computer Science, The University of Adelaide, Australia

Poster Session P1: Poster Session I
Tuesday, November 28, 6:00PM-8:00PM, Room: TAPA Ballroom 1-2, Chair: David Fogel

P101 A Multi-Level Encoder for Text Summarization [#1091]
Junshuai Liu, Xin Xin, Li Li, Liu Shaozhuang and Ma Xiaoyu
Beijing Institute of Technology, China; Beijing Easemob Technology Co, Ltd, China

P102 Procedural Maze Level Generation with Evolutionary Cellular Automata [#1392]
Chad Adams and Sushil Louis
University of Nevada Reno, United States

P103 Recent Advances in Clonal Selection Algorithms and Applications [#1618]
Wenjian Luo and Xin Lin
University of Science and Technology of China, China

P104 Soft Subspace Clustering Using QPSOSC Algorithm [#1486]
Yangyang Li, Xiaoxu Liang, Yujing Lu and Licheng Jiao
Xidian University, China

P105 Enhanced dynamic data-driven monitoring approach: application to a two-tank heater system [#1315]
Fouzi Harrou, Muddu Madakyaru, Ying Sun and Sanjula Kammanmottu
CEMSE Division, King Abdullah University of Science and Technology, Thuwal 23955-6900 Saudi Arabia, Saudi Arabia; Manipal Institute of Technology, Manipal University, India

P106 Relative Torque Contribution Based Model Simplification for Robotic Dynamics Identification [#1740]
Weiqun Wang, Zeng-Guang Hou, Xu Liang, Shixin Ren, Liang Peng, Lincong Luo and Chengkun Cui
Chinese Academy of Sciences, China

P107 A Novel Stability Criterion for Fuzzy Hyperbolic Time-Delay System Based on Dynamic Delay Partitioning Approach [#1262]
Wang Gang, Jia Ru and Liu Jinhai
Northeastern University, China

P108 GPGPU-based Identification of Cointegrated Portfolios [#1299]
Vasco Grossmann and Manfred Schimmller
Christian-Albrechts-University of Kiel, Germany

P109 An Algorithm for Diagnosis of Faults and Power Quality Problems in Radial Distribution Networks [#1060]
Kelly Silva and Helton Alves
IFMA, Brazil

P110 Processing Threshold in an IEEE 802.11a/g/p Receiver over GNU Radio: A Fuzzy Logic Application [#1655]
Cristian David Rodriguez Rodriguez, Gustavo Puerto Leguizamon and Carlos Suarez Fajardo
Universidad Distrital Francisco Jose de Caldas, Colombia

P111 Width design of circulation facilities in urban rail transit station [#1084]
Xinchuan Li, Lu Hu and Kunpeng Zhang
Shenzhen Transportation Design and Research Institute Co., Ltd., China; School of Transportation and Logistics Southwest Jiaotong University, China

P112 Effects Selection Technique for Improving Visual Attraction via Visual Saliency Map [#1036]
Natsumi Suzuki and Yohei Nakada
Graduate School of Advanced Mathematical Sciences, Meiji University, Japan

P113 A Classification Method based on Self-adaptive Artificial Bee Colony [#1430]
Yu Xue, Jiongming Jiang, Bing Xue and Mengjie Zhang
University of Information Science and Technology Nanjing, China; Victoria University of Wellington, New Zealand

P114 DMALN: A Deep Multi-task and Metric Learning Based Network for Video Classification [#1545]
Hongxin Zhi, Hongtao Yu, Shaomei Li and Chao Gao
National Digital Switching System Engineering and Technological Research Center, China

P115 Implementation of Gesture Driven Virtual Reality for Car Racing Game using Back Propagation Neural Network [#1087]
Sriparna Saha, Rimita Lahiri, Amit Konar, Anca L. Ralescu and Atulya K. Nagar
Maulana Abul Kalam Azad University of Technology West Bengal, India; Jadavpur University, Kolkata, India, India; Department of Computer Science EECS Department, University of Cincinnati, USA, United States; Mathematics and Computer Science Department Liverpool Hope University, United Kingdom, United Kingdom

P116 Characterization of Common Videos with Statistical Features Extracted from Frame Transition Profiles [#1509]
Abhiram Gaddampalli and Qiuming Zhu
University of Nebraska at Omaha, United States

P117 Neighborhood Field Optimization Algorithm with Dendritical Structure [#1158]
Nian Ao, Xu Han and Zhou Wu
Chongqing University, China

P118 Law Enforcement Resource Optimization with Response Time Guarantees [#1592]
Jonathan Chase, Jiali Du, Na Fu, Truc Viet Le and Hoong Chun Lau
Singapore Management University, Singapore

P119 Identifying Sunni Extremist Propaganda with Deep Learning [#1232]
Andrew Johnston and Gary Weiss
Fordham University, United States

P120 Evolving Neuromodulatory Architectures on Non-Associative Learning Tasks [#1395]
Jason Yoder
Indiana University, United States

P121 Chemical Concentration Map Building Using Whale Optimization Algorithm [#1259]
Alp Merzi and Veyssel Gazi
Altinbas University, Turkey

P122 Evolving Morphological Robustness in Swarm Robotics [#1491]
Geoff Nitschke and Ruben Putter
University of Cape Town, South Africa

Elizabeth E. Esterly, Helen McCreery and Radhika Nagpal
University of New Mexico, United States; Michigan State University, United States; Harvard University, United States

P124 RBF Based Adaptive Neuro-Fuzzy Inference System to Torque Estimation from EMG signal [#1752]
Tanvir Anwar and Hayat Al-Dmour
Student, Australia

P125  Opposition-based Ensemble Micro-Differential Evolution [#1105]
Hojjat Salehinejad, Shahryar Rahnamayan and Hamid R. Tizhoosh
University of Toronto, Canada; Univ of Ontario Inst of Tech, Canada; University of Waterloo, Canada

P126  Optimal Power Flow Solutions using Population Reduction Technique of Success History based Adaptive Differential Evolution [#1205]
Partha Biswas, Ponnuthurai Suganthan and Gehan Amaratunga
Nanyang Technological University, Singapore; University of Cambridge, United Kingdom

P127  Neuroimaging Biomarkers of Cognitive Decline in Healthy Older Adults via Unified Learning [#1219]
Tayo Obafemi-Ajayi, Khalid Al-Jabery, Lauren Salminen, David Laidlaw, Ryan Cabeen, Donald Wunsch and Robert Paul
Missouri State University, United States; Missouri University of Science and Technology, United States; University of Southern California, United States; Brown University, United States; USC Stevens Neuroimaging and Informatics Institute, United States; University of Missouri-St. Louis, United States

P128  Predicting Risk of Adverse Outcomes in Knee Replacement Surgery with Reconstructability Analysis [#1132]
Cecily Froemke and Martin Zwick
Portland State University, Systems Science Program, United States

P129  Auto-categorization of medical concepts and contexts [#1469]
Anupam Mondal, Erik Cambria, Dipankar Das, Sivaji Bandypadhyay and Feraco Antonio
Department of Computer Science and Engineering, Jadavpur University, India; School of Computer Science and Engineering, Nanyang Technological University, Singapore; Fraunhofer, Singapore

P130  Combining Real-Valued and Binary Gabor-Radon Features for Classification and Search in Medical Imaging Archives [#1692]
Hamed Erfankhah, Mehran Yazdi and Hamid Tizhoosh
Shiraz University, Iran; Shiraz University, Canada; University of Waterloo, Canada

P131  Emotion Recognition with Facial Expressions and Physiological Signals [#1657]
Boxuan Zhong, Zikun Qin, Shuo Yang, Junyu Chen, Nicholas Mudrick, Michelle Taub, Roger Azevedo and Edgar Lobaton
North Carolina State University, United States; Zhejiang University, China

P132  Irregular Breathing Detection in CPAP Assisted Patients Using Hierarchical Temporal Memory [#1665]
Nicholas Mitri, Wissam Marrouche, Mariette Awad and Robert Habib
American University of Beirut, Lebanon

P133  Deep Learning Driven Multimodal Fusion For Automated Deception Detection [#1681]
Mandar Gogate, Ahsan Adeel and Amir Hussain
University of Stirling, United Kingdom

P134  Decomposition Based Dominance Relationship For Evolutionary Many-Objective Algorithm [#1128]
Lei Chen, Hai-Lin Liu and Kay Chen Tan
Guangdong University of Technology, China; City University of Hong Kong, Hong Kong

P135  Deep Learning for Wind Vector Determination [#1080]
Richard McAllister and John Sheppard
Montana State University, United States

P136  Adaptation and Contextualization of Deep Neural Network Models [#1281]
Dimitrios Kollias, Miao Yu, Athanasios Tugaris, Georgios Leontidis, Stefanos Kollias and Andreas Stafylopatis
National Technical University of Athens, Greece; University of Lincoln, United Kingdom

P137
Estimating Cement Compressive Strength from Microstructure Images using Convolutional Neural Network [¶1560]
Meihui Li, Lin Wang, Bo Yang, Liangliang Zhang and Yu Liu
Shandong Provincial Key Laboratory of Network based Intelligent Computing, University of Jinan, China; Shandong Provincial Key Laboratory of Network based Intelligent Computing, University of Jinan; School of Informatics, Linyi University, China; Shenzhen Gangchuang Building Material Co., Ltd., China

P138 Spike Trains Encoding and Threshold Rescaling Method for Deep Spiking Neural Networks [¶1739]
Yang Xu, Huajin Tang, Jinwei Xing and Hongying Li
Sichuan University, China

P139 The Effect of the Number of Ants Parameter in the ACO-R Algorithm: A Run-Time Profiling Study [¶1024]
Ashraf Abdelbar and Khalid Salama
Brandon University, Canada; University of Kent, United Kingdom

P140 A Sugeno-Based Search Width Decay Schedule in the ACO-R Algorithm [¶1025]
Abdelbar Ashraf and Khalid Salama
Brandon University, Canada; University of Kent, United Kingdom

P141 UAV Coverage Path Planning Algorithm for Bridge Detection [¶1437]
Hongwei Mo, He Qu, Lifang Xu, Chaomin Luo, Qirong Tang and Lu Ding
Harbin Engineering University, China; University of Detroit Mercy, United States; Tongji University, China

P142 Solution Recombination in an Indicator-Based Many-Objective Ant Colony Optimizer for Continuous Search Spaces [¶1034]
Ashraf Abdelbar and Khalid Salama
Brandon University, Canada; University of Kent, United Kingdom

P143 An Inverse Reinforcement Learning Algorithm for semi-Markov Decision Processes [¶1047]
Chuanfang Tan, Yanjie Li and Yuhu Cheng
Harbin Institute of Technology Shenzhen Graduate School, China; China University of Mining and Technology, China

P144 Obstacle Avoidance of Hexapod Robots Using Fuzzy Q-Learning [¶1184]
Jun Hong, Kaigiang Tang and Chunlin Chen
Nanjing University, China

P145 Exploiting Structure and Uncertainty of Bellman Updates in Markov Decision Processes [¶1202]
Davide Tateo, Carlo D’Eramo, Alessandro Nuara, Marcello Restelli and Andrea Bonarini
Politecnico di Milano, Italy

P146 A Benchmark Environment Motivated by Industrial Control Problems [¶1217]
Daniel Hein, Stefan Depeweg, Michel Töck, Steffen Udluft, Alexander Hentschel, Thomas A. Runkler and Volkmar Sterzing
Technical University of Munich, Germany; Siemens AG, Germany; AxiomZen, Canada

P147 Data-Driven Robust Regulation of Nonlinear Systems With Mismatched Disturbances [¶1492]
Xiong Yang and Haibo He
Tianjin University, China; University of Rhode Island, United States

P148 Output Constrained Adaptive Dynamic Programming for Continuous-Time Nonlinear Systems [¶1568]
Jingjing Yang, Jingjia Chen, Bo Fan and Qinmin Yang
Guangdong Power Grid Corporation, China; General Electric, United States; Zhejiang University, China

P149 Visualization Method of Relationship among Team Sports Formation Components in Shoot Scenes [¶1056]
Risa Yamamoto, Toshiki Abe and Yohei Nakada
Graduate School of Advanced Mathematical Sciences, Meiji University, Japan; School of Interdisciplinary Mathematical Sciences, Meiji University, Japan
P150  Unpaired Multi-View Kernel Spectral Clustering [#1117]  
Lynn Houthuys and Johan A.K. Suykens  
KU Leuven, Belgium

P151  Microarray Data Classification Using Neuro-Fuzzy Classifier with Firefly Algorithm [#1269]  
Panudech Jinthanasatian, Sansanee Auephanwiriyakul and Nipon Theera-Umpon  
Computer Engineering Dept., Faculty of Engineering, Chiang Mai University, Thailand;  
Electrical Engineering Dept., Faculty of Engineering, Chiang Mai University, Thailand

P152  Development of crime in England and Wales 1898-2001: Data mining using self-organising map [#1480]  
Xingan Li, Henry Joutsijoki, Jorma Laurikkala and Martti Juhola  
Tallinn University, Estonia; University of Tampere, Finland

P153  Reinforcement Learning based Distance Metric Filtering Approach in Clustering [#1125]  
Bassel Ali, Ken-ichi Fukui, Wasin Kalintha, Koichi Moriyama and Masayuki Numao  
Osaka University, Japan; Nagoya Institute of Technology, Japan

P154  Synonym Discovery with Etymology-based Word Embeddings [#1532]  
Seunghyun Yoon, Pablo Estrada and Kyomin Jung  
Seoul National University, Korea (South)

P155  Adapting Sentiment Analysis System from English to Slovak [#1571]  
Martin Mikula, Xiaoying Gao and Kristina Machova  
Technical University of Kosice, Slovakia; Victoria University of Wellington, New Zealand

P156  Privacy Preserving Extreme Learning Machine Using Additively Homomorphic Encryption [#1348]  
Shohei Kuri, Takuya Hayashi, Toshiaki Omori, Seilichi Ozawa, Yoshinori Aono, Le Trieu Phong,  
Lihua Wang and Shiho Moriai  
Kobe University, Japan; National Institute of Information and Communications Technology, Japan

P157  Validity Index-based Vigilance Test in Adaptive Resonance Theory Neural Networks [#1378]  
Leonardo Enzo Brito da Silva and Donald C. Wunsch  
Missouri University of Science and Technology, United States

P158  An Improved Penalty-factor based Attractive and Repulsive Particle Swarm Optimization for Nonconvex Economic Dispatch Problems [#1078]  
Baek Min-Kyu, Park Jong-Bae and Lee Kwang Y.  
Konkuk University, Korea (South); Baylor University, United States

P159  A Residential Energy Management System with Offline Population-Based Optimization [#1741]  
Joao Soares, Fernando Lezama, Sergio Ramos, Zita Vale and Andre Lopes  
Polytechnic of Porto - GECAD, Portugal

P160  Stochastic Optimal Allocation of PMUs for Improving the Accuracy of State Estimation [#1097]  
Hiroyuki Mori, Shota Ogawa and Hsiao-Dong Chiang  
Meiji University, Japan; Cornell University, United States

P161  Multi-population Differential Evolutionary Particle Swarm Optimization for Distribution State Estimation using Correntropy in Electric Power Systems [#1142]  
Sohei Iwata, Yoshikazu Fukuyama, Toru Jintsugawa, Hisashi Fujimoto and Tetsuro Matsui  
Meiji University, Japan; Fuji Electric, Japan

P162  Diversity-Guided Generalized Extremal Optimization for Transformer Design Problem [#1165]  
Leandro dos S. Coelho, Viviana C. Mariani, Rafael B. Grebogi, Emerson H. de Vasconcelos Segundo, Mauricio V. Ferreira da Luz, Jean V. Leite and Roberto Z. Freire  
Pontifical Catholic University of Parana - PUCPR, Brazil; Federal Institute of Santa Catarina - IFSC, Brazil; Federal University of Santa Catarina - UFSC, Brazil

P163  Power System Transmission Line Tripping Analysis using a Big Data platform with 3D visualization [#1527]  
Liu Yuquan, Guo Yuanjun, Yang Zhile, Hu Jingxing, Lu Guojun and Wang Yong  
Guangzhou Power Supply Co. Ltd, China; Shenzhen Institute of Advanced Technology, China

P164  Robust Multi-objective Optimization of a Photovoltaic System with Grid Connection [#1726]
Michal Pluhacek, Roman Senkerik, Adam Viktorin and Tomas Kadavy
Tomas Bata University in Zlin, Czech Republic

P178 Variational Autoencoder Based Synthetic Data Generation for Imbalanced Learning [#1317]
Zhiqiang Wan, Yazhou Zhang and Haibo He
University of Rhode Island, United States

P179 Learning Deep Models of Optimization Landscapes [#1012]
Shumeet Baluja
Google, Inc., United States

P180 System Identification Acceleration and Improvement with Genetic Programming Usage [#1746]
Nowakova Jana, Platos Jan and Hasal Martin
Faculty of Electrical Engineering and Computer Science, VSB-Technical University of Ostrava, Czech Republic; IT4Innovations National Supercomputing Center, VSB-Technical University of Ostrava, Czech Republic

P181 Vanet Scalable Fuzzy Logic Based Adaptive Beaconing [#1688]
Mohammed Alhameed and Imad Mahgoub
Florida Atlantic University, United States

Session CIEL1: Computational Intelligence and Ensemble Learning I
Wednesday, November 29, 8:30AM-10:30AM, Room: Honolulu 1 (Tapa Tower), Chair: P. N. Suganthan

8:30AM A Meta-heuristic with ensemble of local search operators for Urban Traffic Light Optimization [#1580]
Kaizhou Gao, Yicheng Zhang, Yi Zhang and Rong Su
Liaocheng University, China; Nanyang Technological University, Singapore

9:00AM Extending Unified Differential Evolution with a New Ensemble of Constraint Handling Techniques [#1762]
Anupam Trivedi, Nimagna Biswas, Saurajit Chakroborty and Dipti Srinivasan
National University of Singapore, Singapore; Jadavpur University, India

9:30AM Classification of high dimensional data using LASSO ensembles [#1139]
Daniel Urda, Leonardo Franco and Jose M. Jerez
Universidad de Malaga, Spain

10:00AM A Heterogeneous Ensemble of Trees [#1761]
Wen Xin Cheng, Rakesh Katuwal, P.N. Suganthan and Xueheng Qiu
Nanyang Technological University, Singapore

Session CIDUE1: Computational Intelligence in Dynamic and Uncertain Environments I
Wednesday, November 29, 8:30AM-10:30AM, Room: Honolulu 2 (Tapa Tower), Chair: Shengxiang Yang

8:30AM Using Market-based Optimisation to Solve the Dynamic Vehicle Routing Problem [#1130]
Callan Bright, Lyndon While, Tim French and Mark Reynolds
The University of Western Australia, Australia

9:00AM Considering Flexibility in the Evolutionary Dynamic Optimisation of Airport Security Lane Schedules [#1329]
Darren Chitty, Shengxiang Yang and Mario Gongora
De Montfort University, United Kingdom

9:30AM Pheromone Modification Strategy for the Dynamic Travelling Salesman Problem with Weight Changes [#1427]
Michalis Mavrovouniotis, Mien Van and Yang Shengxiang
Nottingham Trent University, United Kingdom; De Montfort University, United Kingdom

10:00AM How to Select a Winner in Evolutionary Optimization? [#1180]
Risto Miikkulainen, Hormoz Shahrzad, Nigel Duffy and Phil Long
Session SIS4: Special Session: Adaptive Swarm Intelligence Algorithms
Wednesday, November 29, 8:30AM-10:30AM, Room: Honolulu 3 (Tapa Tower), Chair: Kyle Robert Harrison

8:30AM Distributed Co-evolutionary Particle Swarm Optimization Using Adaptive Migration Strategy [#1129]
Lin Shi, Zhi-Hui Zhan, Hua-qiang Yuan, Jing-Jing Li and Jun Zhang
South China University of Technology, China; Dongguan University of Technology, China; South China Normal University, China

9:00AM Constrained Ant Brood Clustering Algorithm with Adaptive Radius: A Case Study on Aspect based Sentiment Analysis [#1228]
Qasem Mohammed, Thulasiraman Parimala and Ruppa Thulasiram
Department of Computer Science, University of Manitoba, Canada

9:30AM An Adaptive Particle Swarm Optimization Algorithm Based on Optimal Parameter Regions [#1622]
Kyle Robert Harrison, Andries P. Engelbrecht and Beatrice M. Ombuki-Berman
University of Pretoria, South Africa; Brock University, Canada

10:00AM Adaptive Firefly Algorithm Based on Complex Network Analysis of Population Dynamics [#1666]
Magdalena Metlicka and Donald Davendra
University of Massachusetts Amherst, United States; Central Washington University, United States

Session ADPRL4: Adaptive Dynamic Programming and Reinforcement Learning IV
Wednesday, November 29, 8:30AM-10:30AM, Room: Tapa Ballroom 3, Chair: Zhen Ni and Qinglai Wei

8:30AM A Reinforcement Learning Approach for Sequential Decision-Making Process in Smart Grid Security [#1534]
Zhen Ni, Shuva Paul, Xiangnan Zhong and Qinglai Wei
South Dakota State University, United States; University of North Texas, United States; Chinese Academy of Science, China

9:00AM Multi-objective Energy Management for We-Energy in Energy Internet using Reinforcement Learning [#1447]
Qiuye Sun, Danlu Wang, Dazhong Ma and Bonan Huang
School of Information Science and Engineering, Northeastern University, China

9:30AM Discrete-Time Generalized Policy Iteration ADP Algorithm With Approximation Errors [#1508]
Qinglai Wei, Li Benkai and Song Ruizhuo
The State Key Laboratory of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Sciences, China; University of Science and Technology Beijing, China

10:00AM Deep Reinforcement Learning Based Optimal Defense for Cyber-Physical System in presence of Unknown Cyber-attack [#1549]
Ming Feng and Hao Xu
University of Nevada Reno, United States

Session CICA1: Computational Intelligence in Control and Automation I
Wednesday, November 29, 8:30AM-10:30AM, Room: Iolani 3-4 (Tapa Tower), Chair: Yoshihiko Miyasato and Kazi Shah Nawaz Ripon

8:30AM Flying Vehicle Longitudinal Controller Design via Prey-Predator Pigeon-Inspired Optimization [#1059]
Mostafa S. Mohamed, Haibin Duan and Li Fu
Beihang University, China

9:00AM  Adaptive H-infinity Consensus Control of Euler-Lagrange Systems on Directed Network Graph by Utilizing Neural Network Approximators [#1146]
Yoshiihiko Miyasato
The Institute of Statistical Mathematics, Japan

9:30AM  Optimizing Bio-Inspired Propulsion Systems Using Genetic Algorithm [#1327]
Kazi Shah Nawaz Ripon, Thomas Gjerde and John Martin Kleven Godo
Norwegian University of Science and Technology, Norway; Norwegian University of Science and Technology, Norway; Norwegian University of Science and Technology, Norway

10:00AM  Learning to Regulate Rolling Ball Motion [#1675]
Devesh Jha, William Yerazunis, Daniel Nikovski and Amir-massoud Farahmand
Mitsubishi Electric Research Laboratories, United States

Session CIES4: Computational Intelligence for Engineering Solutions IV
Wednesday, November 29, 8:30AM-10:30AM, Room: Nautilus (Kalia Tower), Chair: Tim Berthold

8:30AM  Aspects of Computational Intelligence in Structural Dynamics: Structural Health Monitoring. [#1603]
Nikolaos Dervilis, Elizabeth J. Cross, Ifigeneia Antoniadou, Charles Farrar and Keith Worden
University of Sheffield, United Kingdom; Los Alamos National Laboratories, United States

9:00AM  Comparison of Bayesian and Interval Uncertainty Quantification: Application to the AIRMOD Test Structure [#1148]
Matteo Broggi, Matthias Faes, Edoardo Patelli, Yves Govers, David Moens and Michael Beer
Leibniz University Hannover - Institute for Risk and Reliability, Germany; KU Leuven - Department of Mechanical Engineering, Belgium; University of Liverpool - Institute for Risk and Uncertainty, England; German Aerospace Center (DLR) - Institute for Aeroelasticity, Germany

9:30AM  Using a Multiobjective Genetic Algorithm for Curve Approximation [#1331]
Tim Sabsch, Christian Braune, Alexander Dockhorn and Rudolf Kruse
Otto-von-Guericke-University Magdeburg, Germany

10:00AM  On Advances in Development of Evolutionary Algorithms for Chosen Large Optimization Problems of Computational Mechanics [#1391]
Janusz Orkisz and Maciej Glowacki
Cracow University of Technology, Poland

Session CIASG4: Computational Intelligence Applications in Smart Grid IV
Wednesday, November 29, 8:30AM-10:30AM, Room: Lehua (Kalia Tower), Chair: Ahmed Saber

8:30AM  An Ensemble of Multi-objective Optimized Fuzzy Regression Models for Short-term Electric Load Forecasting [#1637]
Tomas Vantuch and Michal Prilepok
Centre ENET at VSB-Technical University of Ostrava, Czech Republic; Department of computer science at VSB-Technical University of Ostrava, Czech Republic

9:00AM  Pattern Recognition for Electric Energy Consumption Prediction in a Laboratory Environment [#1699]
Guneet Bedi, Ganesh Kumar Venayagamoorthy and Rajendra Singh
Real-Time Power and Intelligent Systems Laboratory, Holcombe Department of Electrical and Computer Engineering, Clemson University, United States; Real-Time Power and Intelligent Systems Laboratory, Holcombe Department of Electrical and Computer Engineering, Clemson University; and School of Engineering, University of KwaZulu-Natal, Durban 4041, South Africa, United States; Real-Time Power and Intelligent Systems
Laboratory, Holcombe Department of Electrical and Computer Engineering and Department of Automotive Engineering, Clemson University, United States

9:30AM  Short Term Load Forecasting using Multiple Linear Regression for Big Data [#1483]
Ahmed Saber
ETAP, United States

10:00AM  A Computational Intelligence Approach for Residential Home Energy Management Considering Reward Incentives [#1473]
Zhen Ni, Priti Paudyal and Xiangnan Zhong
South Dakota State University, United States; University of North Texas, United States

Session CCB1: Computational Intelligence, Cognitive Algorithms, Mind, and Brain I
Wednesday, November 29, 8:30AM-10:30AM, Room: Kahili (Kalia Tower), Chair: Angelo Cangelosi

8:30AM  A Type-2 Fuzzy Set Induced Classification of Cognitive Load in Inter-individual Working Memory Performance based on Hemodynamic Response [#1341]
Amiyangshu De, Tanuka Bhattacharjee, Amit Konar, Anca L. Ralescu and Atulya K. Nagar
Jadavpur University, India; ECECS Department, University of Cincinnati, United States; Mathematics and Computer Science Department, Liverpool Hope University, United Kingdom

9:00AM  Stable Sparse Encoding for Predictive Processing [#1402]
Linda Main and John Thornton
Griffith University, Australia

9:30AM  Classification of EEG Signals using Fractal Dimension Features and Artificial Neural Networks [#1428]
Roberto A. Vazquez and Rocio Salazar-Varas
Universidad La Salle Mexico, Mexico

10:00AM  Simulating and Reconstructing Neurodynamics with Epsilon-Automata Applied to Electroencephalography (EEG) Microstate Sequences [#1750]
Chrystopher L. Nehaniv and Elena Antonova
University of Hertfordshire, United Kingdom; King's College London, United Kingdom

Session CIRZAT1: Computational Intelligence in Robotic Rehabilitation and Assistive Technologies I
Wednesday, November 29, 8:30AM-10:30AM, Room: Hibiscus 1 (Kalia Tower), Chair: Javier Leonardo Castellanos

8:30AM  A Method for an Agile, User Centered Development of Natural User Interfaces [#1326]
Karolina Bernat, Sobin Ghose, Kai von Luck and Florian Vogt
University of Applied Sciences (HAW), Germany

9:00AM  Korean Sign Language Recognition Using EMG and IMU Sensors Based on Group-Dependent NN Models [#1185]
Seongjoo Shin, Baek Youngmi, Lee Jinhee, Eun Yongsoon and Son Sang Hyuk
DGIST, Korea (South)

9:30AM  Lexa: A Tool for Detecting Dyslexia through Auditory Processing [#1349]
Alexandra Poole, Farhana Zulkernine and Catherine Aylward
School of Computing, Queen's University, Canada

10:00AM  The Effects of Adjusting Task Difficulty on Learning Motor and Cognitive Aspects of A Multitasking Task [#1700]
Brittney English and Ayanna Howard
Georgia Institute of Technology, United States

Session CIEL2: Computational Intelligence and Ensemble Learning II
Wednesday, November 29, 10:45AM-12:45PM, Room: Honolulu 1 (Tapa Tower), Chair: P. N. Suganthan
10:45AM Hierarchical Clustering of Ensemble Prediction Using LOOCV Predictable Horizon for Chaotic Time Series [#1520]
Shuichi Kurogi, Naoto Shimoda and Kazuya Matsuo
Kyushu Institute of Technology, Japan

11:15AM Wind Speed Forecasting Using Empirical Mode Decomposition and Regularized ELANFIS [#1589]
Gn Pillai and K V Shihabudheen
Indian Institute of Technology, Roorkee, India

11:45AM Probabilistic Wind Power Forecasting: A Multi-Scheme Ensemble Technique With Gradual Cooperative Soft Gating [#1626]
Andre Gensler and Bernhard Sick
University of Kassel, Germany

12:15PM Short-term Wind Power Ramp Forecasting with Empirical Mode Decomposition based Ensemble Learning Techniques [#1733]
Xueheng Qiu, Ye Ren, Ponnuthurai Nagaratnam Suganthan and Gehan A. J. Amaratunga
Nanyang Technological University, Singapore; University of Cambridge, United Kingdom

Session CIDM3: Learning in Nonstationary Environments
Wednesday, November 29, 10:45AM-12:45PM, Room: Honolulu 2 (Tapa Tower), Chair: Ashley Prater

10:45AM On Ensemble Components Selection in Data Streams Scenario with Reoccurring Concept-Drift [#1654]
Piotr Duda, Maciej Jaworski and Leszek Rutkowski
Czestochowa University of Technology, Poland

11:15AM Fine Tuning Lasso in an Adversarial Environment Against Gradient Attacks [#1203]
Gregory Ditzler and Ashley Prater
The University of Arizona, United States; Air Force Research Laboratory, United States

11:45AM Detecting Changes in Sequences of Attributed Graphs [#1504]
Daniele Zambon, Lorenzo Livi and Cesare Alippi
Università della Svizzera italiana, Switzerland; University of Exeter, United Kingdom

12:15PM Linear Supervised Transfer Learning for the Large Margin Nearest Neighbor Classifier [#1650]
Kolja Berger, Alexander Schulz, Benjamin Paassen and Barbara Hammer
CITEC, Bielefeld University, Germany

Session SIS5: Special Session: Swarm Intelligence for Robotics and Mechatronics
Wednesday, November 29, 10:45AM-12:45PM, Room: Honolulu 3 (Tapa Tower), Chair: Qirong Tang, Chaomin Luo and Ding Lu

10:45AM Energy-Saving Decision Making for Aerial Swarms: PSO-based Navigation in Vector Fields [#1330]
Palina Bartashevich, Doreen Koerte and Sanaz Mostaghim
Frau, Germany

11:15AM On Static Control of Swarm Systems [#1595]
Lukas Tomaszek and Ivan Zelinka
Department of Computer Science, VSB Technical University of Ostrava, Czech Republic

11:45AM A Stigmergy Based Aggregation Method for Swarm Robotic System [#1667]
Qirong Tang, Lu Ding, Jiaying Li, Yuan Zhang and Fangchao Yu
Laboratory of Robotics and Multibody System, School of Mechanical Engineering, Tongji University, China

12:15PM Novel Physicomimetic Bio-inspired Algorithm for Search and Rescue Applications [#1701]
Rahul Rajan, Michael Otte and Donald Sofge
Naval Research Lab, United States
Session ADPRL5: Adaptive Dynamic Programming and Reinforcement Learning V  
Wednesday, November 29, 10:45AM-12:45PM, Room: Tapa Ballroom 3, Chair: K. G. Vamvoudakis and Hamidreza Modares

10:45AM Off-policy Reinforcement Learning for Distributed Output Synchronization of Linear Multi-agent Systems [#1071]  
Bahare Kiumarsi and Frank Lewis  
University of Texas at Arlington Research Institute, United States

11:15AM Distributed Control of Leader-follower Systems under Adversarial Inputs Using Reinforcement Learning [#1090]  
Rohollah Moghadam, Qinglai Wei and Hamidreza Modares  
Missouri University of Science and Technology, United States; Institute of Automation, Chinese Academy of Sciences, China; Missouri University of Science and Technology, China

11:45AM An Adaptive Spiking Neural Controller for Flapping Insect-scale Robots [#1323]  
Taylor Clawson, Terrence Stewart, Chris Eliasmith and Silvia Ferrari  
Cornell University, United States; University of Waterloo, Canada

Session CICA2: Computational Intelligence in Control and Automation II  
Wednesday, November 29, 10:45AM-12:45PM, Room: Iolani 3-4 (Tapa Tower), Chair: Jun Yoneyama and Jagendra Singh

10:45AM Fuzzy Logic Hybrid Model with Semantic Filtering Approach for Pseudo Relevance Feedback-based Query Expansion [#1212]  
Jagendra Singh, Mukesh Prasad, Yousef Awwad Daraghmi, Prayag Tiwari, Pranay Yadav, Neha Bharill, Mahardhika Pratama and Amit Saxena  
National Institute of Technology, India; University of Technology Sydney, Australia; Palestine Technical University, Palestine; University of Padua, Italy; Rajiv Gandhi Proudyogiki Vishwavidyalaya, India; Indian Institute of Technology Indore, India; Nanyang Technological University, Singapore; Guru Ghasidas University, India

11:15AM Fuzzy Clustering based Modelling and Adaptive Controlling of a Flapping Wing Micro Air Vehicle [#1274]  
Md Meftahul Ferdaus, Sreenatha G. Anavatti, Matthew A. Garratt and Mahardhika Pratama  
UNSW Canberra at ADFA, Australia; School of Computer Science and Engineering, Nanyang Technological University, Singapore

11:45AM Control Design of Nonlinear Networked Control Systems via Takagi-Sugeno Fuzzy Model [#1354]  
Jun Yoneyama  
Aoyama Gakuin University, Japan

Session CIES5: Computational Intelligence for Engineering Solutions V  
Wednesday, November 29, 10:45AM-12:45PM, Room: Nautilus (Kalia Tower), Chair: Liam Comerford

10:45AM Multi-Objective Knowledge-Based Strategy for Process Parameter Optimization in Micro-Fluidic Chip Production [#1216]  
Alexandru-Ciprian Zavoianu, Edwin Lughof er, Robert Pollak, Pauline Meyer-Heye, Christian Eitzinger and Thomas Radauer  
Johannes Kepler University Linz, Austria; Profactor GmbH, Austria; Strattec Consumables, Austria

11:15AM Revealing Properties of Structural Materials by Combining Regression-based Algorithms and Nano Indentation Measurements [#1332]
Sebastian Huhn, Heike Sonnenberg, Stephan Eggersgluss, Brigitte Clausen and Rolf Drechsler
Institute of Computer Science, University of Bremen, Germany; Foundation Institute of Materials Science, University of Bremen, Germany
11:45AM Public Private Partnership: A Design Issue [#1640]
Qingbin Cui, Xinyuan Zhu and Alex D’Alessio
University of Maryland, United States; Boeing Company, United States
12:15PM Seabed Sediment Classification of Side-scan Sonar Data Using Convolutional Neural Networks [#1410]
Tim Berthold, Artem Leichter, Bodo Rosenhahn, Volker Berkhahn and Jennifer Valerius
Institute for Risk and Reliability, Leibniz University of Hanover, Germany; Institute for Information Processing, Leibniz University of Hanover, Germany; Federal Maritime and Hydrographic Agency, Germany

Session CIASG5: Computational Intelligence Applications in Smart Grid V
Wednesday, November 29, 10:45AM-12:45PM, Room: Lehua (Kalia Tower), Chair: Michael Mylrea

10:45AM Fault Tolerant Fusion of Office Sensor Data using Cartesian Genetic Programming [#1067]
Peter Bentley and Soo Ling Lim
University College London, United Kingdom
11:15AM Anomaly Detection in Smart Grids with Imbalanced Data Methods [#1678]
Christian Promper, Engel Dominik and Green Robert
Salzburg University of Applied Sciences, Austria; Bowling Green State University, United States
11:45AM An Introduction to Buildings Cybersecurity Framework (BCF) [#1426]
Michael Mylrea, Sri Nikhil Gupta Gourisetti and Andrew Nicholls
Pacific Northwest National Laboratory, United States
12:15PM Multi-Scenario Use Case based Demonstration of Buildings Cybersecurity Framework Webtool [#1442]
Sri Nikhil Gupta Gourisetti, Michael Mylrea, Easton Gervais and Sraddhanjoli Bhadra
Pacific Northwest National Laboratory, United States

Session CCMB2: Computational Intelligence, Cognitive Algorithms, Mind, and Brain II
Wednesday, November 29, 10:45AM-12:45PM, Room: Kahili (Kalia Tower), Chair: Alessandro Di Nuovo

10:45AM Neuro-Energetic Aspects of Cognition - The Role of Pulse-Wave-Pulse Conversion in the Interpretation of Brain Imaging Data [#1772]
Raymond Noack, Joshua Davis, Chetan Manjesh and Robert Kozma
UMass Amherst, MA, United States; Embassy of Peace, New Zealand
11:15AM Chunking Mechanisms for a Self Improving Associative Memory Model [#1396]
Peter Kimani Mungai and Runhe Huang
Hosei University, Japan
11:45AM EEG Analysis for Short Term Memory Modeling in Visually Explored Shape Recognition Tasks [#1564]
Lidia Ghosh, Amit Konar, Pratyusha Rakshit, Anca L. Ralescu and Atulya K. Nagar
Jadavpur University, India; University of Cincinnati, United States; Liverpool Hope University, United Kingdom
12:15PM Mutual Information Maximization for Improving and Interpreting Multi-Layered Neural Network [#1335]
Ryotaro Kamimura
Tokai University, Japan

Session CIR2AT2: Computational Intelligence in Robotic Rehabilitation and Assistive Technologies II
10:45AM Synergistic Fibroblast Optimization Based Improved Reinforcement Learning For Intelligent Assistive Device [#1226]
Subashini Parthasarathy, Dhivyaprabha Thookanayakanpalayam Thyagarajan, Krishnaveni Marimuthu and Vedha Vyas Gopalakrishnan
Avinashilingam Institute for Home Science and Higher Education for Women, India; Kumaraguru College of Technology, India

11:15AM Using Machine Learning Based on Eye Gaze to Predict Targets: An Exploratory Study [#1380]
Javier Leonardo Castellanos Cruz, Maria Fernanda Gomez Medina and Kimberley Dawn Adams
University of Alberta, Canada

11:45AM Does Appearance Matter? Validating Engagement in Therapy Protocols with Socially Interactive Humanoid Robots [#1556]
Breanna Lee, Jin Xu and Ayanna Howard
Louisiana State University, United States; Georgia Institute of Technology, United States

12:15PM Accident Prediction Based on Motion Data for Perception-Assist with a Power-Assist Robot [#1717]
Kazuo Kiguchi and Ryosuke Matsuo
Kyushu University, Japan; University of Tokyo, Japan

Session CIDM4: Feature selection and data mining
Wednesday, November 29, 2:00PM-4:00PM, Room: Honolulu 2 (Tapa Tower), Chair: Maciej Jaworski

2:00PM Clustering of Time Series using Hybrid Symbolic Aggregate Approximation [#1098]
Keiichi Tamura and Takumi Ichimura
Hiroshima City University, Japan; Prefecture University of Hiroshima, Japan

2:30PM Speeding Up Joint Mutual Information Feature Selection with an Optimization Heuristic [#1200]
Heng Liu and Gregory Ditzler
The University of Arizona, United States

3:00PM Evaluation of Latent Dirichlet Allocation for Document Organization in Different Levels of Semantic Complexity [#1222]
Roberta Akemi Sinoara, Ricardo Brigato Scheicher and Solange Oliveira Rezende
Universidade de Sao Paulo, Brazil

3:30PM Proposal of l-Diversity Algorithm Considering Distance between Sensitive Attribute Values [#1279]
Keiichiro Oishi, Yuichi Sei, Yasuyuki Tahara and Akihiko Ohsuga
The University of Electro-Communications, Japan

Plenary Talk P1-ALIFE: Life as an Emergent Phenomenon: Studies From Large-Scale Boid Simulation and Web Data
Wednesday, November 29, 2:00PM-3:00PM, Room: Honolulu 3 (Tapa Tower), Speaker: Takashi Ikegami

Session ADPRL6: Adaptive Dynamic Programming and Reinforcement Learning VI
Wednesday, November 29, 2:00PM-4:00PM, Room: Tapa Ballroom 3, Chair: Hao Xu and Avrimanyu Sahoo

2:00PM Containment Control of Heterogeneous Systems with Active Leaders of Bounded Unknown Control using Reinforcement Learning [#1471]
Yongliang Yang, Ruizhuo Song, Yixin Yin, Donald Wunsch and Hamidreza Modares
University of Science and Technology Beijing, China; Missouri University of Science and Technology, United States

2:30PM Optimal Sampling and Regulation of Uncertain Interconnected Linear Continuous Time Systems [#1434]
Avimanyu Sahoo, Vignesh Narayanan and Jagannathan Sarangapani
Oklahoma State University, United States; Missouri University of Science and Technology, United States

3:00PM A Biologically-Inspired Intelligent Controller for Distributed Velocity Control of Multiple Electro-Hydraulic Servo-Systems [#1438]
Mohammad Jafari and Hao Xu
Department of Electrical and Biomedical Engineering, University of Nevada, Reno, United States

3:30PM Optimal Self-Triggered Control and Network Co- design for Networked Multi-Agent System via Adaptive Dynamic Programming [#1581]
Sanket Lokhande and Hao Xu
University of Nevada, Reno, United States

Session CICA3: Computational Intelligence in Control and Automation III
Wednesday, November 29, 2:00PM-4:00PM, Room: Iolani 3-4 (Tapa Tower), Chair: Chris Macnab and Peter Bentley

2:00PM Achieving Robust Adaptive CMAC Control by Overlayering Basis Functions [#1010]
Chris Macnab
University of Calgary, Canada

2:30PM Autonomous Navigation and Landing of Airliners Using Artificial Neural Networks and Learning by Imitation [#1195]
Haitham Baomar and Peter Bentley
University College London, United Kingdom

3:00PM The Context-Aware Learning Model: reward-based and experience-based Logistic Regression Backpropagation [#1706]
Joohee Suh and Dean Hougen
University of Oklahoma, United States

3:30PM Stochastic Synapse Reinforcement Learning (SSRL) [#1737]
Syed Naveed Hussain Shah and Dean Frederick Hougen
University of Oklahoma, United States

Session CIES6: Computational Intelligence for Engineering Solutions VI
Wednesday, November 29, 2:00PM-4:00PM, Room: Nautilus (Kalia Tower), Chair: Michael Beer

2:00PM Concise Iterative Algorithms On the State Feedback Form for Model Predictive Control and Stability Analysis of Regime Switching Systems [#1441]
Yipeng Yang and Neal Nesbitt
University of Houston - Clear Lake, United States

2:30PM Cyber Civil Infrastructure and IoT for Cities [#1046]
Alberto Costa, Marco Proverbio and Ian Smith
National University of Singapore and ETH-Zurich, Future Resilient Systems, Singapore; ETH-Zurich, Future Cities Laboratory, Singapore; EPFL, Swiss Federal Institute of Technology, Switzerland

3:00PM Total Optimization of a Smart City by Multi-Population Differential Evolutionary Particle Swarm Optimization. [#1119]
Mayuko Sato and Yoshikazu Fukuyama
Meiji University, Japan

3:30PM Smart City Digital Twins [#1751]
Neda Mohammadi and John E. Taylor
Session CIVTS1: Special Session: Advances in Intelligent Systems and Algorithms for Autonomous Driving and its Applications  
Wednesday, November 29, 2:00PM-4:00PM, Room: Lehua (Kalia Tower), Chair: Mahmoud Abou Nasr and Weiwei Zhang

2:00PM Design of an Intelligent Driving System Simulation Platform and Its Application [#1175]  
Wei Zhou, Lin Yang, Jingni Yuan, Tianxing Ying, Yang Yang and Mao Du  
School of Mechanical Engineering, Shanghai Jiao Tong University, China

2:30PM Improved Search Paths for Camera-Equipped UAVs in Wilderness Search and Rescue [#1278]  
Michael Pelosi and Michael Brown  
East Central University, United States; University of Maryland University College, United States

3:00PM Driver Yawning Detection based on Long Short Term Memory Networks [#1623]  
Weiwei Zhang and Jinya Su  
Shanghai University of Engineering Science, China

3:30PM Obstacle Detection in Outdoor Scenes based on Multi-Valued Stereo Disparity Maps [#1306]  
Qian Ge and Edgar Lobaton  
North Carolina State University, United States

Session CCMB3: Computational Intelligence, Cognitive Algorithms, Mind, and Brain III  
Wednesday, November 29, 2:00PM-4:00PM, Room: Kahili (Kalia Tower), Chair: Angelo Cangelosi

2:00PM A Biologically Inspired Deep Neural Network of Basal Ganglia Switching in Working Memory Tasks [#1656]  
Nadine Hajj and Mariette Awad  
American University of Beirut, Lebanon

2:30PM Parallelizable Deep Self-Organizing Maps for Image Classification [#1756]  
Chathurika Wickramasinghe, Kasun Amarasinghe and Milos Manic  
Virginia Commonwealth University, United States

3:00PM An Embodied Model for Handwritten Digits Recognition in a Cognitive Robot [#1505]  
Alessandro Di Nuovo  
Sheffield Hallam University, Great Britain

3:30PM Amplitude-Phase Relationship of Brain Dynamics Viewed by ECoG using FIR-Based Hilbert Analysis [#1435]  
Joshua J.J. Davis and Robert Kozma  
Embassy of Peace Whitianga, New Zealand; U of Memphis, United States

Session CIMSIVP1: Computational Intelligence for Multimedia, Signal and Vision Processing I  
Wednesday, November 29, 2:00PM-4:00PM, Room: Hibiscus 1 (Kalia Tower), Chair: Salim Bouzerdoum and Brijesh Verma

2:00PM Rank Level Fusion for Kinect Gait and Face Biometric Identification [#1011]  
Md Wasiur Rahman, Fatema Tuz Zohra and Marina Gavrilova  
University of Calgary, Canada

2:30PM Coarse-to-Fine Foraminifera Image Segmentation through 3D and Deep Features [#1292]  
Qian Ge, Boxuan Zhong, Bhargav Kanakiya, Ritayan Mitra, Thomas Marchitto and Edgar Lobaton  
North Carolina State University, United States; University of Colorado Boulder, United States

3:00PM Optimization of Convolutional Neural Network Parameters for Image Classification [#1614]  
Toshi Sinha, Brijesh Verma and Ali Haidar  
Central Queensland University, Australia
3:30PM Classification of the Estrous Cycle through Texture and Shape Features [1693]
Leonardo Delgado, Gerardo Hernandez, Erik Zamora, Humberto Sossa, Aldrin Barreto,
Francisco Ramos and Rosalina Reyes
Benemérita Universidad Autónoma de Puebla, México; Instituto Politécnico Nacional,
Mexico

Session ALIFE2: IEEE Artificial Life II
Wednesday, November 29, 3:00PM-4:30PM, Room: Honolulu 3 (Tapa Tower), Chair: Hiroki
Sayama

3:00PM When the Selfish Herd is too Crowded to Enter [1347]
Wen-Chi Yang
Henan Institute of Technology, China

3:30PM Automatically Evolving a General Controller for Robot Swarms [1703]
John Ericksen, Melanie Moses and Stephanie Forrest
UNM Computer Science, United States; Santa Fe Institute, United States

4:00PM Models of Adaptive Navigation, Inspired by Ant Cooperative Transport in the Presence of
Obstacles [1171]
Elizabeth E. Esterly, Helen McCreery and Radhika Nagpal
University of New Mexico, United States; Michigan State University, United States; Harvard
University, United States

4:15PM Evolving Morphological Robustness in Swarm Robotics [1491]
Geoff Nitschke and Ruben Putter
University of Cape Town, South Africa

Tutorial T11: Type-2 Fuzzy Sets And Systems
Thursday, November 30, 8:30AM-10:30AM, Room: Honolulu 1 (Tapa Tower), Instructor: Jon
Garibaldi

Plenary Talk P-SIS: Evolving Intelligence: Beyond Algorithms
Thursday, November 30, 8:30AM-9:30AM, Room: Honolulu 3 (Tapa Tower), Speaker: Russell
C. Eberhart

Session IC: Workshop on Immune Computation
Thursday, November 30, 8:30AM-10:30AM, Room: Iolani 5-6 (Tapa Tower), Chair: Wenjian Luo
and Licheng Jiao

8:30AM Large-Scale Data Clustering Algorithm Based on Quantum Immune Regulation Network
[1555]
Yangyang Li, Xiaoyu Bai, Xiaoju Hou and Licheng Jiao
Xidian University, China

9:00AM Multi-objective artificial immune algorithm for fuzzy clustering based on multiple kernels
[1512]
Ronghua Shang, Weitong Zhang, Feng Li, Licheng Jiao and Rustam Stolkin
Xidian University, China; University of Birmingham, United Kingdom

9:30AM Negative Selection Based Anomaly Detector for Multimodal Health Data [1646]
Drew Levin, Melanie Moses, Tatiana Flanagan, Stephanie Forrest and Patrick Finley
Sandia National Laboratories, United States; University of New Mexico, United States;
Arizona State University, United States

10:00AM MiGHT, a multi-level Gillespie hybrid tracked modeling framework which allows for
cellular and environmental adaptivity [1531]
Justin Melunis and Uri Hershberg
Drexel University, United States
Session CICA4: Computational Intelligence in Control and Automation IV

Thursday, November 30, 8:30AM-10:30AM, Room: Iolani 3-4 (Tapa Tower), Chair: Chris Macnab and Peter Bentley

8:30AM Using CMAC for Adaptive Nonlinear MPC and Optimal Setpoint Identification of an Activated Sludge Process [#1106]
Chris Macnab and Mahsa Sadeghassadi
University of Calgary, Canada; University of Calgary, Canada

9:00AM Altitude Identification and Intelligent Control of a Flapping Wing Micro Aerial Vehicle using Modified Generalized Regression Neural Networks [#1244]
Ahmad Jobran Al-Mahasneh, Sreenatha G Anavatti and Matthew A Garratt
School of Engineering and Information Technology University of New South Wales at the Australian Defense Force Academy, Canberra, ACT 2612, Australia, Australia

9:30AM Generalizing Piecewise Affine System Identification to Local Model Networks [#1301]
Tobias Muenker and Oliver Nelles
University of Siegen, Germany

10:00AM Staged-adaptive data clustering in fuzzy min-max neural network [#1048]
Yanjuan Ma, Jinhai Liu, Tailin Li and Lu Danyu Lu
Northeastern University, China; Shenyang highlight technology Co.Ltd, China

Session CIVTS2: Special Session: Data Representation for Learning Vehicle Intelligence
Thursday, November 30, 8:30AM-10:30AM, Room: Nautilus (Kalii Tower), Chair: Xian Wei

8:30AM Traffic Sign Recognition with Transfer Learning [#1605]
Xishuai Peng, Yuanxiang Li, Xian Wei, Jianhua Luo and Yi Lu Murphey
Shanghai Jiao Tong University, China; University of Michigan-Dearborn, United States

9:00AM An SVM Parameter Learning Algorithm Scalable on Large Data Size for Driver Fatigue Detection [#1679]
Yongquan Xie, Chengji Blan, Yi Murphey and Dev Kochhar
University of Michigan-Dearborn, United States; Ford Motor Company, United States

9:30AM Context Based Pedestrian Intention Prediction using Factored Latent Dynamic Conditional Random Fields [#1276]
Satyajit Neogi, Michael Hoy, Weng Chaoqun and Justin Dauwels
Nanyang Technological University, Singapore

10:00AM CNN Transfer Learning for Robust Face Recognition in NAO Humanoid Robot [#1636]
Daniel Bussey, Alex Glandon, Lasitha Vidyaratne, Mahbubul Alam and Khan Iftekharuddin
Embry-Riddle Aeronautical University, United States; Old Dominion University, United States

Session SDE1: Symposium on Differential Evolution I
Thursday, November 30, 8:30AM-10:30AM, Room: Lehua (Kalii Tower), Chair: Petr Bujok

8:30AM Niching Community Based Differential Evolution for Multimodal Optimization Problems [#1027]
Ting Huang, Zhi-Hui Zhan, Xing-dong Jia, Hua-qiang Yuan, Jing-qing Jiang and Jun Zhang
South China University of Technology, China; Shenzhen Polytechnic, China; Dongguan University of Technology, China; Inner Mongolia University for Nationalities, China

9:00AM Performance Comparison of Differential Evolution Driving Analytic Programming for Regression [#1742]
Roman Senkerik, Adam Viktorin, Michal Pluhacek, Tomas Kadavy and Zuzana Oplatkova
Tomas Bata University in Zlin, Czech Republic

9:30AM Enhancing Discrete Differential Evolution by Conducting Election [#1124]
Sedigheh Mahdavi and Shahryar Rahnamayan
University of Ontario Institute of Technology (UOIT), Canada

10:00AM Influence of Control Parameters Adaptation on Spread of Positive Genomes Within Populations of Selected Differential Evolution Algorithms [#1443]
Session MBEA1: Model Based Evolutionary Algorithms I
Thursday, November 30, 8:30AM-10:30AM, Room: Kahili (Kalia Tower), Chair: Jose Lozano

8:30AM A study on Estimation of Distribution Algorithm based on a Partial Differential Equation Model [#1144]
Satoru Iwasaki and Toshiharu Hatanaka
Osaka University, Japan

9:00AM A Proportion-Based Selection Scheme for Multi-objective Optimization [#1489]
Liuwei Fu, Juan Zou, Shengxiang Yang, Gan Ruan, Jinhua Zheng and Zhongwei Ma
School of Information Engineering, Xiangtan University, China; School of Computer Science and Informatics De Montfort University, China; School of Information Science and Engineering Central South University, China

9:30AM Surrogate Modeling and Knowledge Extraction in GA applied to a Parameters Estimation Case [#1277]
Israel Cruz-Vega, Omar Sandre, Jose de Jesus Rangel-Magdaleno, Juan Manuel Ramirez-Cortes and Roberto Morales-Caporal
CONACYT-IAOE, Mexico; INAOE - Electronica, Mexico; Technological Institute of Apizaco, Mexico

10:00AM Comparisons of Different Kernels in Kriging-Assisted Evolutionary Expensive Optimization [#1515]
Tian Jie, Tan Ying, Sun Chaoli, Zeng Jianchao, Yu Haibo and Jin Yaochu
Taiyuan University of Science and Technology, China; North University of China, China; University of Surrey, England

Session CISND1: Computational Intelligence in Scheduling and Network Design I
Thursday, November 30, 8:30AM-10:30AM, Room: Hibiscus 1 (Kalia Tower), Chair: Ling Wang

8:30AM A Discrete Teaching-Learning-Based Optimisation Algorithm for Hybrid Flowshop Scheduling Problem with Peak Power Consumption Constraints [#1570]
Jingnan Shen, Ling Wang and Jingjing Wang
Department of Automation, Tsinghua University, China

9:00AM Optimizing Different Parameters of a Discrete Firefly Algorithm for Solving the Permutation Flow Shop Problem [#1150]
Joel Schmid, Laura Kieser, Thomas Hanne and Rolf Dornberger
University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

9:30AM A Cooperative Algorithm for Energy-efficient Scheduling of Distributed No-wait Flowshop [#1251]
Jingjing Wang, Ling Wang, Chuge Wu and Jingnan Shen
Department of Automation, Tsinghua University, China

10:00AM Practical Train Crew Scheduling Using Improved Tabu Search [#1602]
Kokubo Tatsuya, Kawaguchi Shuhei and Yoshikazu Fukuyama
Meiji University, Japan

Session SIS6: Special Session: Swarm based algorithms, complex systems and applications I
Thursday, November 30, 9:30AM-10:30AM, Room: Honolulu 3 (Tapa Tower), Chair: Kromer Pavel

Leonard Kinniard-Heether and Robert Reynolds
Wayne State University, United States

10:00AM Network Measures and Evaluation of Traveling Salesman Instance Hardness [#1642]
Plenary Talk P-FASLIP: The Framework of Learning in the Model Space and its Applications
Thursday, November 30, 10:45AM-11:45AM, Room: Honolulu 1 (Tapa Tower), Speaker: Huanhuan Chen

Session CIDM5: Evolutionary Computation
Thursday, November 30, 10:45AM-12:45PM, Room: Honolulu 2 (Tapa Tower), Chair: Gregory Ditzler

10:45AM A Parallel Genetic Algorithm with Region Division Strategy to Solve Taxi-Passenger Matching Problem [#1182]
Liu Yi-Wen, Zhang Xin-Yuan, Gong Yue-Jiao, Chen Wei-Neng and Zhang Jun
South China University of Technology, China

11:15AM Multi-Objective Evolution of Machine Learning Workflows [#1648]
Tomas Kren, Martin Pilat and Roman Neruda
Charles University, Faculty of Mathematics and Physics, Czech Republic; Institute of Computer Science, Czech Academy of Sciences, Czech Republic

11:45AM A Hybrid Deterministic Classifier Based on Artificial Immune Recognition System and Genetic Algorithm [#1255]
Ilyes Jenhani and Zied Elouedi
Prince Mohamed Bin Fahd University, Saudi Arabia; Larodec, ISG Tunis, Tunisia

12:15PM A Memetic Algorithm for community detection by maximising the Connected Cohesion [#1713]
Mohammad Nazmul Haque, Luke Mathieson and Pablo Moscato
University of Newcastle, Australia; University of Technology Sydney, Australia

Session SIS7: Special Session: Swarm based algorithms, complex systems and applications II
Thursday, November 30, 10:45AM-12:45PM, Room: Honolulu 3 (Tapa Tower), Chair: Roman Senkerik

10:45AM Deep Swarm: Nested Particle Swarm Optimization [#1199]
Russell Eberhart, Doyle Groves and Joshua Woodward
Consultant, United States; Proofpoint Inc., United States; Indiana Univ. Purdue Univ. Indianapolis, United States

11:15AM Modeling Time-Sensitive Swarm Dynamics [#1035]
Hideyasu Sasaki
National Institute of Information and Communications Technology, Japan

11:45AM How Chaotic Sequences and Generator Sequencing Affect the Particle Trajectory in PSO [#1734]
Michal Pluhacek, Roman Senkerik, Adam Viktorin and Tomas Kadavy
Tomas Bata University in Zlín, Czech Republic

12:15PM Partial Population Restart of Firefly Algorithm Using Complex Network Analysis [#1730]
Tomas Kadavy, Michal Pluhacek, Adam Viktorin and Roman Senkerik
Tomas Bata University in Zlín, Faculty of Applied Informatics, Czech Republic

Session MCDM1: Computational Intelligence in Multicriteria Decision-Making I
Thursday, November 30, 10:45AM-12:45PM, Room: Tapa Ballroom 1, Chair: Marde Helbig

10:45AM A Surrogate-assisted Memetic Algorithm for Interval Multi-objective Optimization [#1286]
Jing Sun, Zhuang Miao and Dunwei Gong
HuaiHai Institute of Technology, China; China University of Mining and Technology, China

11:15AM Adaptive Weight Vector Assignment Method for MOEA/D [#1355]
Kei Harada, Satoru Hiwa and Tomoyuki Hiroyasu
Doshisha University, Japan
11:45AM Nondominated Sorting based on Sum of Objectives [#1243]
Vikas Palakonda, Trinadh Pamulapati, Rammohan Mallipeddi, Partha P. Biswas and
Kalyana Chakravarthy Veluvolu
Kyungpook National University, Korea (South); Nanyang Technological University,
Singapore

12:15PM A Differential Evolution Algorithm for Dynamic Multi-Objective Optimization [#1218]
Adekunle Rotimi Adekoya and Marde Helbig
University of Pretoria, South Africa

Session CICA5: Computational Intelligence in Control and Automation V
Thursday, November 30, 10:45AM-12:45PM, Room: Iolani 3-4 (Tapa Tower), Chair: Weiqun
Wang and Julian Belz

10:45AM Normalized L1 Regularization for Axis-Oblique Tree Construction Algorithms [#1163]
Julian Belz and Oliver Nelles
University of Siegen, Germany

11:15AM Identification of nonlinear dynamical systems by means of complex-valued fuzzy-neural
multi-model [#1167]
Mario Maya and Ieroham Baruch
Centro de Investigacion y Estudios Avanzados del Instituto Politecnico Nacional, Mexico

11:45AM MIMO Hammerstein System Identification using LS-SVM and Steady State Time Response
[#1210]
Ricardo Castro-Garcia, Oscar Mauricio Agudelo and Johan A. K. Suykens
KU Leuven, Belgium

12:15PM B-Spline Neural Network and Chaotic Harmony Search Applied to Yo-yo Motion System
Identification [#1250]
Rafael B. Grebogi, Roberto Z. Freire, Viviana C. Mariani and Leandro dos S. Coelho
Federal Institute of Santa Catarina, Brazil; Pontificia Catholic University of Parana -
PUCPR, Brazil

Session CIVTS3: Special Session: Computational Intelligence in Intelligent Transport
Systems
Thursday, November 30, 10:45AM-12:45PM, Room: Nautilus (Kalia Tower), Chair: Enrique
Dominguez

10:45AM Merging and Splitting Maneuver of Platoons by Means of a novel PID Controller [#1134]
Soumya Dasgupta, Varunkumar Raghuraman, Apratim Choudhury, Nagacharan Teja
Tangirala and Justin Dauwels
Nanyang Technological University, Singapore

11:15AM Analysis and Prediction of the Queue Length for Non-Recurring Road Incidents. [#1201]
Banishree Ghosh, Justin Dauwels and Ulrich Fastenrath
Nanyang Technological University, Singapore; BMW Group, Germany

11:45AM Estimation of Travel Time from Taxi GPS Data [#1265]
Kelvin Lee, Anatoliy Prokhorchuk, Justin Dauwels and Patrick Jaillet
NANYANG TECHNOLOGICAL UNIVERSITY, Singapore; Nanyang Technological University,
Singapore; Massachusetts Institute of Technology, United States

12:15PM A Data Driven Hybrid Heuristic for the Dial-A-Ride Problem with Time Windows [#1659]
Slim Belhaiza
Department of Mathematics and Statistics, King Fahd University of Petroleum and
Minerals, KSA, Saudi Arabia

Session SDE2: Symposium on Differential Evolution II
Thursday, November 30, 10:45AM-12:45PM, Room: Lehua (Kalia Tower), Chair: Radka
Polakova

10:45AM
Petr Bujok, Josef Tvrdik and Radka Polakova
University of Ostrava, Czech Republic

11:15AM Distance Based Parameter Adaptation for Differential Evolution [#1256]
Adam Viktorin, Roman Senkerik, Michal Pluhacek, Tomas Kadavy and Ales Zamuda
Tomas Bata University in Zlin, Czech Republic; University of Maribor, Slovenia

11:45AM Differential Evolution with Self-adaptive Mutation Scaling Factor [#1319]
Hanan Hiba, Sedigheh Mahdavi and Shahryar Rahnamayan
Department of Electrical, Computer, and Software Engineering University of Ontario Institute of Technology (UOIT), Canada

Radka Polakova, Josef Tvrdik and Petr Bujok
University of Ostrava, Czech Republic

Session MBEA2: Model Based Evolutionary Algorithms II
Thursday, November 30, 10:45AM-12:45PM, Room: Kahili (Kalia Tower), Chair: Simon Lucas and Yaochu Jin

10:45AM Efficient Noisy Optimisation with the Multi-Sample and Sliding Window Compact Genetic Algorithms [#1606]
Simon M. Lucas, Jialin Liu and Diego Perez-Liebana
Queen Mary University of London, United Kingdom; University of Essex, United Kingdom

11:15AM Polynomial-Chaos-Kriging-Assisted Efficient Global Optimization [#1072]
Pramudita Palar and Koji Shimoyama
Tohoku University, Japan

11:45AM Surrogate Modeling a Computational Fluid Dynamics-based Wind Turbine Wake Simulation using Machine Learning [#1096]
Brett Wilson, Michael Mayo and Sarah Wakes
University of Waikato, New Zealand; University of Otago, New Zealand

Session CISND2: Computational Intelligence in Scheduling and Network Design II
Thursday, November 30, 10:45AM-12:45PM, Room: Hibiscus 1 (Kalia Tower), Chair: Ruibin Bai

10:45AM Variable Length Encoded Genetic Algorithm for Optimal Electrical Distribution Network Routing [#1318]
James R. E. Fletcher, Mark Reynolds, Tyrone Fernando, Herbert. H. C. Iu and Shervin Fani
University of Western Australia, Australia; Western Power, Australia

11:15AM Fuzzy C-Means-based Scenario Bundling for Stochastic Service Network Design [#1181]
Xiaoping Jiang, Ruibin Bai, Dario Landa-Silva and Uwe Aickelin
University of Nottingham Ningbo China, China; University of Nottingham, United Kingdom

11:45AM Improved Benders Decomposition for Capacitated Hub Location Problem with Incomplete Hub Networks [#1621]
Xu Yifan, Dai Weibin, Sun Xiaqian and Wandelt Sebastian
Beihang University, China

12:15PM General Contraction Method for Uncapacitated Single Allocation p-hub Median Problems [#1585]
Weibin Dai, Zhang Jun, Xiaoqian Sun and Sebastian Wandelt
Beihang University, China

Session FASLI1: Computational Intelligence in Feature Analysis, Selection, and Learning in Image and Pattern Recognition I
Thursday, November 30, 11:45AM-12:45PM, Room: Honolulu 1 (Tapa Tower), Chair: Mengjie Zhang and Ashley Prater
11:45AM Classification via Tensor Decompositions of Echo State Networks [#1270]
Ashley Prater
Air Force Research Laboratory, United States

12:15PM A Differential Evolution Based Feature Selection Approach Using An Improved Filter Criterion [#1553]
Emrah Hancer, Bing Xue and Mengjie Zhang
Mehmet Akif Ersoy University, Turkey; Victoria University of Wellington, New Zealand

Session FASLP2: Computational Intelligence in Feature Analysis, Selection, and Learning in Image and Pattern Recognition II
Thursday, November 30, 2:00PM-4:00PM, Room: Honolulu 1 (Tapa Tower), Chair: Tomoyuki Hiroyasu and Edoardo Patelli

2:00PM Sparse Feature Selection Method by Pareto-front Exploration -Extraction of functional brain network and ROI for fMRI data- [#1453]
Tomoyuki Hiroyasu, Yuuki Kohri and Satoru Hiwa
Doshisha University, Japan

2:30PM Uncertainty Quantification Methods for Neural Networks Pattern Recognition [#1309]
Silvia Tolo, T.V. Santhosh, Gopika Vinod, Oparaji Uchenna and Edoardo Patelli
University of Liverpool, United Kingdom; Bhabha Atomic Research Centre, India

3:00PM Robust and Sparse Kernel PCA and its Outlier Map [#1017]
Kunzhe Wang and Huaitie Xiao
National University of Defense Technology, China

3:30PM Dependence structure of Gabor wavelet for face recognition [#1008]
Li Chaorong, Xue Yu and Huang Yuanyuan
University of Electronic Science and Technology of China, China; Nanjing University of Information Science and Technology, China

Session CIDM6: Special Session – Mining the sky: knowledge discovery in big and complex astronomical data sets and data streams
Thursday, November 30, 2:00PM-4:00PM, Room: Honolulu 2 (Tapa Tower), Chair: E. Merényi, G. Djorgovski, G. Longo and K. Polsterer

2:00PM Photometric Redshift Estimation: An Active Learning Approach [#1350]
Ricardo Vilalta, Raymond Surriso, Emille Ishida, Robert Beck, Rafael De Souza and Ashish Mahabal
University of Houston, United States; Universite Clermont-Auvergne, France; Eotvos Lorand University, Hungary; University of North Carolina, United States; California Institute of technology, United States

2:30PM Classification of Objects in Geosynchronous Earth Orbit Via Light Curve Analysis [#1268]
Walter Bennette, Kayla Zeliff and Joseph Raquepas
US Air Force, United States

3:00PM Massively-Parallel Best Subset Selection for Ordinary Least-Squares Regression [#1421]
Fabian Gieseke, Kai Polsterer, Ashish Mahabal, Christian Igel and Tom Heskes
University of Copenhagen, Denmark; Heidelberg Institute for Theoretical Studies, Germany; California Institute of Technology, United States; Radboud University Nijmegen, Netherlands

3:30PM Deep-Learnt Classification of Light Curves [#1297]
Ashish Mahabal, Kshiteej Sheth, Fabian Gieseke, Akshay Pai, SGeorge Djorgovski, Andrew Drake and Matthew Graham
California Institute of technology, United States; Indian Institute of Technology Gandhinagar, India; University of Copenhagen, Denmark; University of Copenhagen, United States; California Institute of Technology, United States
Session ALIFE3: IEEE Artificial Life III
Thursday, November 30, 2:00PM-4:30PM, Room: Honolulu 3 (Tapa Tower), Chair: Takashi Ikegami

2:00PM Fundamentalism in a Social Learning Perspective - A Memetic Agent Model of Vegetarianism, Social Interaction Networks and Food Markets [#1140]
Thomas Schmickl
Karl-Franzens University of Graz, Artificial Life Lab of the Institute of Zoology, Austria

2:30PM Understanding Evolutionary Dynamics in Online Social Networks [#1019]
Mizuki Oka, Yasuhiro Hashimoto and Takashi Ikegami
University of Tsukuba, Japan; The University of Tokyo, Japan

3:00PM Introducing Simulated Stem Cells into a Bio-Inspired Cell-Cell Communication Mechanism for Structure Regeneration [#1357]
Giordano Ferreira, Matthias Scheutz and Michael Levin
Tufts University, United States

3:30PM Ultimate Ecology: How a Socio-Economic Game Can Evolve into a Resilient Ecosystem of Agents [#1178]
Thomas Schmickl and Yannick Oswald
Artificial Life Lab of the Institute of Zoology Karl-Franzens University Graz, Austria; Institute of Systems Sciences, Innovation and Sustainability Research Karl-Franzens University Graz, Austria

4:00PM Evolving Neuromodulatory Architectures on Non-Associative Learning Tasks [#1395]
Jason Yoder
Indiana University, United States

4:15PM Chemical Concentration Map Building Through Whale Optimization Algorithm [#1259]
Alp Merzi and Veysel Gazi
Altinbas University, Turkey

Session MCDM2: Computational Intelligence in Multicriteria Decision-Making II
Thursday, November 30, 2:00PM-4:00PM, Room: Tapa Ballroom 1, Chair: Sanaz Mostaghim

2:00PM Quantified Pareto-optimal Front Comparisons using Attainment Surfaces [#1122]
Christiaan Scheepers and Andries Engelbrecht
University of Pretoria, South Africa

2:30PM Comparing Multi-Objective Optimization Algorithms Using an Ensemble of Quality Indicators with Deep Statistical Comparison Approach [#1187]
Tome Eftimov, Peter Korosec and Barbara Korousic Seljak
Jožef Stefan International Postgraduate School, Slovenia; Jožef Stefan Institute, Slovenia

3:00PM Multi-Objective Optimization Problem Mapping Based on Algorithmic Parameter Rankings [#1735]
Motoaki Kakuguchi, Minami Miyakawa, Keiki Takadama and Hiroyuki Sato
The University of Electro-Communications, Japan; JSPS Research Fellow (PD) and Hosei University, Japan

3:30PM Comparison Study of Large-scale Optimisation Techniques on the LSMOP Benchmark Functions [#1280]
Heiner Zille and Sanaz Mostaghim
Otto von Guericke University Magdeburg, Germany

Session EALS: Workshop: Evolving and Automomous Learning Systems
Thursday, November 30, 2:00PM-4:00PM, Room: Iolani 3-4 (Tapa Tower), Chair: Igor Skrjanc

2:00PM Nurturing Promotes the Evolution of Reinforcement Learning in Changing Environments [#1705]
Syed Naveed Hussain Shah and Dean Hougen
University of Oklahoma, United States

2:30PM
Evolving Cauchy Possibilistic Clustering and Its Application to Large-Scale Cyberattack Monitoring [1374]
Igor Skrjanc, Seichi Ozawa, Dejan Dovzan, Ban Tao, Junji Nakazato and Jumpei Shimamura
University of Ljubljana, Slovenia; Kobe University, Japan; National Institute of Information and Communications Technology, Japan; clwit Inc., Japan

3:00PM Evolving Neuro-Fuzzy System based Online Identification of a Bio-inspired Flapping Wing Micro Aerial Vehicle [1422]
Md Meftahul Ferdaus, Mahardhika Pratama, Sreenatha G. Anavatti and Matthew A. Garratt
UNSW Canberra at ADFA, Australia; School of Computer Science and Engineering, Nanyang Technological University, Singapore

Session CIVTS4: Special Session: Electric Vehicle Wired/Wireless Charging and Management
Thursday, November 30, 2:00PM-4:00PM, Room: Nautilus (Kalia Tower), Chair: Kevin Bai

2:00PM A Dual-DSP Controlled SiC MOSFET based 96%-efficiency 20kW EV On-board Battery Charger Using LLC Resonance Technology [1484]
Philip Johnson and Kevin(Hua) Bai
Kettering University, United States; UM-Dearborn, United States

2:30PM Multi-objective Optimization of Plug-in Electric Vehicle Charging Prices [1513]
Steffen Limmer and Tobias Rodemann
Honda Research Institute Europe GmbH, Germany

3:00PM Analytical Greedy Control and Q-Learning for Optimal Power Management of Plug-in Hybrid Electric Vehicles [1518]
Chang Liu and Yi Lu Murphy
University of Michigan - Dearborn, United States

3:30PM Model-Predictive Planning for Autonomous Vehicles Anticipating Intentions of Vulnerable Road Users by Artificial Neural Networks [1459]
Jan Eilbrecht, Maarten Bieshaar, Stefan Zernetsch, Konrad Doll, Bernhard Sick and Olaf Stursberg
University of Kassel, Germany; University of Applied Sciences Aschaffenburg, Germany

Session CISDA1: Computational Intelligence for Security and Defense Applications I
Thursday, November 30, 2:00PM-4:00PM, Room: Lehua (Kalia Tower), Chair: Marco Cococcioni

2:00PM A Reinforcement Learning Approach to Tackle Illegal, Unreported and Unregulated Fishing [1573]
Tolulope Akinbulire, Howard Schwartz, Rafael Falcon and Rami Ableilmona
Carleton University, Canada; Larus Technologies, Canada

2:30PM Multi-Aspect Path Planning for Enhanced Ground Combat Simulation [1154]
Gustav Tolt, Johan Hedstroem, Solveig Bruvoll and Martin Asprusten
Swedish Defence Research Agency, Sweden; Norwegian Defence Research Establishment, Norway

3:00PM An Energy-Efficient Embedded Implementation For Target Recognition In SAR Imagerys [1390]
Megan Renz and Qing Wu
University at Buffalo, United States; Air Force Research Laboratory, United States

3:30PM Possibilistic Fuzzy Local Information C-Means for Sonar Image Segmentation [1649]
Alina Zare, Nicholas Young, Daniel Suen, Thomas Nabelek, Aquila Galusha and James Keller
University of Florida, United States; University of Missouri, United States

Session CIPLS1: Computational Intelligence in Production and Logistics Systems I
Thursday, November 30, 2:00PM-4:00PM, Room: Kahili (Kalia Tower), Chair: Raymond Chiong

2:00PM Parallel Reactive Tabu Search for Job-Shop Scheduling Problems Considering Energy Management [1141]
Shuhei Kawaguchi, Tatsuya Kokubo and Yoshikazu Fukuyama
Meiji University, Japan
2:30PM Coordinated Warehouse Order Picking and Production Scheduling: A NSGA-II Approach [#1109]
Ehsan Ardjmand and Dong Wook Huh
Frostburg State University, United States
3:00PM Multi-objective optimization of single machine scheduling with energy consumption constraints [#1712]
Xiaoya Liao, Rui Zhang and Raymond Chiong
The University of Newcastle, Australia; Xiamen University of Technology, China
3:30PM A hybrid particle swarm optimisation approach for energy-efficient single machine scheduling with cumulative deterioration and multiple maintenances [#1577]
Mehdi Abedi, Raymond Chiong, Nasimul Noman and Rui Zhang
The University of Newcastle, Australia; Xiamen University of Technology, China

Session CISND3: Computational Intelligence in Scheduling and Network Design III
Thursday, November 30, 2:00PM-4:00PM, Room: Hibiscus 1 (Kalia Tower), Chair: Rong Qu
2:00PM Exact and Heuristic Approaches for the Multi-Agent Orienteering Problem with Capacity Constraints [#1599]
Wenjie Wang, Hoong Chuin Lau and Shih-Fen Cheng
Singapore Management University, Singapore
2:30PM Genetic Algorithm for Solving Minimal Exposure Path in Mobile Sensor Networks [#1710]
Nguyen Thi My Binh, Chu Minh Thang, Nguyen Duc Nghia and Huynh Thi Thanh Binh
Hanoi University of Industry Hanoi, Vietnam, Viet Nam; Hanoi University of Science and Technology, Viet Nam
3:00PM Immunization of Networks Using Genetic Algorithms and Multiobjective Metaheuristics [#1662]
Asep Maulana, Marios Kefalas and Michael Emmerich
Leiden University, Netherlands
3:30PM Modified Multiobjective Evolutionary Algorithm based on Decomposition for Low-Carbon Scheduling of Distributed Permutation Flow-Shop [#1164]
Enda Jiang, Ling Wang and Jiawen Lu
Department of Automation, Tsinghua University, China

Session FASLIP3: Computational Intelligence in Feature Analysis, Selection, and Learning in Image and Pattern Recognition III
Friday, December 1, 8:30AM-10:30AM, Room: Honolulu 1 (Tapa Tower), Chair: Huanhuan Chen and Kourosh Neshatian
8:30AM A Predictive Performance Comparison of Machine Learning Models for Judicial Cases [#1748]
Zhenyu Liu and Huanhuan Chen
China University of Political Science and Law, China; University of Science and Technology of China, China
9:00AM On the Existence of Feature Bundles and their Effect on Symbolic Regression Algorithms [#1731]
Kourosh Neshatian and Lucianne Varn
University of Canterbury, New Zealand; Independent Researcher, New Zealand
9:30AM Three Dimensional Segmentation for Cement Microtomography Images using Self-Organizing Map and Neighborhood Features [#1289]
Liangliang Zhang, Lin Wang, Bo Yang, Zhenxiang Chen, Jin Zhou, Yamin Han and Meihui Li
University of Jinan, China
10:00AM The Importance of the Activation Function in NeuroEvolution with FS-NEAT and FD-NEAT [#1598]
Evgenia Papavasileiou and Bart Jansen
ETRO-Vrije Universiteit Brussel, imec, Belgium

Session CIASG6: Computational Intelligence Applications in Smart Grid VI
Friday, December 1, 8:30AM-9:30AM, Room: Honolulu 2 (Tapa Tower), Chair: Tiago Pinto

8:30AM Bilateral Contract Prices Estimation using a Q-Learning based approach [#1362]
Jaime Rodriguez-Fernandez, Tiago Pinto, Francisco Silva, Isabel Praca, Zita Vale and Juan Manuel Corchado
GECAD - Polytechnic of Porto, Portugal; University of Salamanca, Spain

9:00AM Hybrid Particle Swarm Optimization of Electricity Market Participation Portfolio [#1407]
Ricardo Faia, Tiago Pinto, Zita Vale and Juan Manuel Corchado
GECAD/IPP, Portugal; University of Salamanca, Spain

Plenary Talk P2-ALIFE: Revisiting Eigen's Paradox for the Evolution of Genetic Information
Friday, December 1, 8:30AM-9:30AM, Room: Honolulu 3 (Tapa Tower), Speaker: Lee Altenberg

Session MBEA3: Model Based Evolutionary Algorithms III
Friday, December 1, 8:30AM-9:30AM, Room: Coral 5, Chair: Weinan Xu and Yaochu Jin

8:30AM Combined Differential Evolution and NSGA-II Approach for Parametric Optimization of a Cancer Immunotherapy Model [#1478]
Weinan Xu, Jianxin Xu, Danhua He and Kay Chen Tan
NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore; Department of Electrical and Computer Engineering, National University of Singapore, Singapore; Department of Mathematics, Zhejiang International Studies University, China; Department of Computer Science, City University of Hong Kong, Hong Kong

9:00AM Interactive Genetic Algorithm with Implicit Uncertainty Evaluation for Application in Personalized Search [#1157]
Xiaoyan Sun, Yang Chen, Lin Bao and Ruidong Xu
School of Information and Control Engineering, China University of Mining and Technology, China; School of Electrical and Power Engineering, China University of Mining and Technology, China

Plenary Talk P-SNCC: Cyborg Intelligence
Friday, December 1, 8:30AM-9:30AM, Room: Iolani 3-4 (Tapa Tower), Speaker: Gang Pan

Session CIVTS5: Machine Learning in Intelligent Vehicle Systems
Friday, December 1, 8:30AM-10:30AM, Room: Nautilus (Kalua Tower), Chair: Justin Dauwels

8:30AM Accurate Vehicle Position Estimation Using a Kalman Filter and Neural Network-based Approach [#1651]
Stanley Baek, Chang Liu, Paul Watta and Yi Murphey
University of Michigan-Dearborn, United States

9:00AM Accurate Pedestrian Path Prediction using Neural Networks [#1702]
Yi Murphey, Chang Liu, Muhammad Tayyab and Divyendu Narayan
University of Michigan-Dearborn, United States

9:30AM Neighbouring Link Travel Time Inference Method Using Artificial Neural Network [#1413]
Luong Vu, Benjamin Passow, Daniel Palusczczyszyn, Lipika Deka and Eric Goodyer
De Montfort University’s Interdisciplinary Research Group in Intelligent Transport Systems (DIGITS), De Montfort University, United Kingdom

Session CISDA2: Computational Intelligence for Security and Defense Applications II
Friday, December 1, 8:30AM-10:30AM, Room: Lehua (Kalua Tower), Chair: Svetlana Yanushkevich
8:30AM Watchlist Risk Assessment using Multiparametric Cost and Relative Entropy [#1408]
Kenneth Lai and Svetlana Yanushkevich
University of Calgary, Canada

9:00AM Symptoms Detection in Eye Retina Image [#1313]
Daniel Kostialik, Lukas Maruniak and Martin Drahansky
Brno University of Technology, Faculty of Information Technology, Centre of Excellence IT4Innovations, Czech Republic

9:30AM Emerging EEG and Kinect Face Fusion for Biometric Identification [#1429]
Md Wasiur Rahman and Marina Gavrilova
University of Calgary, Canada

10:00AM Adversarial Authorship, Interactive Evolutionary Hill-Climbing, and AuthorCAAT-III [#1645]
Christina Faust, Gerry Dozier, Jinsheung Xu and Michael King
North Carolina A and T State University, United States; Auburn University, United States; Florida Institute of Technology, United States

Session CIPLS2: Computational Intelligence in Production and Logistics Systems II
Friday, December 1, 8:30AM-10:30AM, Room: Kahili (Kalia Tower), Chair: Yassine Ouazene and Farouk Yalaoui

8:30AM Solving the Sequential Ordering Problem Using Branch and Bound [#1033]
Jafar Jamal, Shobaki Ghassan, Vassilis Papapanagiotou, Luca Maria Gambardella and Roberto Montemanni
IDSIA-USI/SUPSI, Switzerland; California State University, United States

9:00AM Coordination and optimization of dynamic pricing and production decisions [#1467]
Yassine Ouazene, Farouk Yalaoui, Russell Kelly and Tayeb Idjeraoui
University of Technology of Troyes, France; Norelem SAS, France

9:30AM 2-Dimensional Rectangles-in-Circles Packing and Stock Cutting with Particle Swarm Optimization [#1172]
Michal Okulewicz
Warsaw University of Technology, Poland

10:00AM Evaluating Decomposition Strategies to Enable Scalable Scheduling for a Real-World Multi-line Steel Scheduling Problem [#1340]
Manal Adham, Peter Bentley and Diaz Diego
University College London, United Kingdom; ArcelorMittal Global R and D Asturias, Spain

Session RiiSS1: Symposium on Robotic Intelligence in Informationally Structured Space I
Friday, December 1, 8:30AM-10:30AM, Room: Hibiscus 1 (Kalia Tower), Chair: Chu-Kiong Loo

8:30AM Collaborative Learning between Robots and Children with Potential Symptoms of a Developmental Disability [#1196]
Felix Jimenez, Tomohiro Yoshikawa, Takeshi Furushashi, Masayoshi Kanoh and Tsuyoshi Nakamura
Graduate School of Engineering, Nagoya University, Japan; School of Engineering, Chukyo University, Japan; Graduate School of Engineering, Nagoya Institute of Technology, Japan

9:00AM Estimation of Autonomic Nervous Activity toward Affective Human-Robot Interaction [#1477]
Takuya Hashimoto, Keita Tsuji, Yoichi Yamazaki and Guanghao Sun
Tokyo University of Science, Japan; Kanagawa Institute of Technology, Japan; The University of Electro-Communications, Japan

9:30AM Pointing Gesture Detection for Human-Robot Communication in Informationally Structured Space [#1587]
Takenori Obo, Ryosuke Kawabata and Naoyuki Kubota
Tokyo Polytechnic University, Japan; Tokyo Metropolitan University, Japan

10:00AM Development of Werewolf Match System with Analysis of Human Gaze Motion [#1729]
Satoshi Nira and Daisuke Katagami
Session DL1: Symposium on Deep Learning I
Friday, December 1, 8:30AM-10:30AM, Room: Hibiscus 2 (Kalia Tower), Chair: Alessandro Sperduti

8:30AM On Learning the Structure of Sum-Product Networks [#1038]
Cory Butz, Jhonatan Oliveira and Andre dos Santos
University of Regina, Canada

9:00AM Modular Representation of Autoencoder Networks [#1114]
Chihiro Watanabe, Kaoru Hiramoto and Kunio Kashino
NTT Communication Science Laboratories, Japan

9:30AM GLSR-VAE: Geodesic Latent Space Regularization for Variational AutoEncoder Architectures [#1166]
Gaetan Hadjeres, Frank Nielsen and Francois Pachet
LIP6, Universite Pierre et Marie Curie, Paris; Sony CSL, Paris, France; Ecole Polytechnique, Palaiseau, France; Sony CSL, Tokyo, France; Sony CSL, Paris, France

10:00AM Hidden Tree Markov Networks: Deep and Wide Learning for Structured Data [#1448]
Davide Bacciu
University of Pisa, Italy

Panel Session CIASG-P: Computational Intelligence in Demand Response and Smart Grid modeling
Friday, December 1, 9:30AM-10:30AM, Room: Honolulu 2 (Tapa Tower), Chair: Tiago Pinto

Session ALIFE4: IEEE Artificial Life IV
Friday, December 1, 9:30AM-10:30AM, Room: Honolulu 3 (Tapa Tower), Chair: Mizuki Oka

9:30AM Governing the swarm [#1633]
Martin Stefanec, Martina Szopek, Rob Mills and Thomas Schmickl
University of Graz, Austria; University of Lisbon, Portugal

10:00AM Robust Tracking and Behavioral Modeling of Movements of Biological Collectives from Ordinary Video Recordings [#1440]
Hiroki Sayama, Farnaz Zamani Esfahlan, Ali Jazayeri and J. Scott Turner
Binghamton University, United States; Drexel University, United States; SUNY ESF, United States

Session SNCC1: Symposium on Neuromorphic Cognitive Computing I
Friday, December 1, 9:30AM-10:30AM, Room: Iolani 3-4 (Tapa Tower), Chair: Saber Moradi

9:30AM Synergy Between Short-Term and Long-Term Plasticity Explains Direction-Selectivity in Visual Cortex [#1300]
Nareg Berberian, Matt Ross, Sylvain Chartier and Jean-Philippe Thivierge
University of Ottawa, Canada

10:00AM Wide learning. [#1316]
Katarzyna Kozdon and Peter Bentley
University College London, United Kingdom

Session FASLIP4: Computational Intelligence in Feature Analysis, Selection, and Learning in Image and Pattern Recognition IV
Friday, December 1, 10:45AM-12:45PM, Room: Honolulu 1 (Tapa Tower), Chair: Mengjie Zhang and George Tambouratzis

10:45AM A Supervised Feature Weighting Method for Salient Object Detection using PSO [#1241]
Shima Afzali Vahed Moghaddam, Bing Xue, Harith Al-Sahaf and Mengjie Zhang
Victoria University of Wellington, New Zealand

11:15AM A Comparative Study of Image Classification Algorithms for Foraminifera Identification [#1312]
Boxuan Zhong, Qian Ge, Bhargav Kanakiya, Ritayan Mitra, Thomas Marchitto and Edgar Lobaton
North Carolina State University, United States; University of Colorado Boulder, United States
11:45AM Image approach to voice recognition [#1160]
Dawid Polap and Marcin Wozniak
Institute of Mathematics, Silesian University of Technology, Kaszubksa 23, 44-100 Gliwice, Poland
12:15PM The effectiveness of surrogate functions in improving the accuracy of PSO-type algorithms in an NLP task [#1643]
George Tambouratzis
ILSP/Athena R.C., Greece

Session DL2: Symposium on Deep Learning II
Friday, December 1, 10:45AM-12:45PM, Room: Honolulu 2 (Tapa Tower), Chair: Plamen Angelov

10:45AM Grading Fruits and Vegetables Using RGB-D Images and Convolutional Neural Network [#1510]
Toshiki Nishi, Shuichi Kurogi and Matsuo Kazuya
Kyushu Institute of Technology, Japan

11:15AM Effects of Variability in Synthetic Training Data on Convolutional Neural Networks for 3D Head Reconstruction [#1559]
Jan Philip Gopfert, Christina Gopfert, Mario Botsch and Barbara Hammer
CITEC, Bielefeld University, Germany

11:45AM Analyzing clarinet sound using deep learning. A preliminary study. [#1586]
Francisco Chavez de la O, Francisco Fernandez de Vega and Francisco Javier Rodriguez Diaz
University of Extremadura, Spain

12:15PM Fingerprint Classification Using Convolutional Neural Networks and Ridge Orientation Images [#1671]
John Shrein
University of Memphis, United States

Session ALIFE5: IEEE Artificial Life V
Friday, December 1, 10:45AM-12:45PM, Room: Honolulu 3 (Tapa Tower), Chair: Melanie Moses

10:45AM Evolving Spiking Neural Networks to Control Animats for Temporal Pattern Recognition and Foraging [#1722]
Chama Bensmail, Volker Steuber, Neil Davey and Borys Wrobel
Adam Mickiewicz University, Poznan, Poland; University of Hertfordshire, United Kingdom

11:15AM Inform: A Toolkit for Information-Theoretic Analysis of Complex Systems [#1361]
Douglas G. Moore, Gabriele Valentini, Sara I. Walker and Michael Levin
Arizona State University, United States; Tufts University, United States

11:45AM Towards a Plant Bio-Machine [#1528]
Stefano Nichele, Sebastian Risi, Gunnar Tufte and Laura Beloff
Oslo and Akershus University College of Applied Sciences, Norway; IT University of Copenhagen, Denmark; Norwegian University of Science and Technology, Norway

12:15PM Computing by Nowhere Increasing Complexity [#1153]
Bar Peled, Vikas Kumar Mishra and Avishy Carmi
Ben-Gurion University of the Negev, Israel

Session MCDM3: Computational Intelligence in Multicriteria Decision-Making III
Friday, December 1, 10:45AM-12:45PM, Room: Coral 5, Chair: Akira Oyama
10:45AM A Pareto-Beneficial Sub-Tree Mutation for the Multi-Criteria Minimum Spanning Tree Problem [#1336]
Jakob Bossek and Christian Grimme
University of Muenster, Germany

11:15AM An Extended Mutation-Based Priority-Rule Integration Concept for Multi-Objective Machine Scheduling [#1419]
Jakob Bossek and Christian Grimme
University of Muenster, Germany

11:45AM A Multiobjective Genetic Algorithm based Hybrid Recommendation Approach [#1610]
Pan Wang, Xingquan Zuo, Xinzhao Zhao and Chaomin Luo
Beijing University of Posts and Telecommunications, China; University of Detroit Mercy, United States

12:15PM Simultaneous Structure Design Optimization of Multiple Car Models Using K Computer [#1639]
Akira Oyama, Takehisa Kohira, Hiromasa Kemmotsu, Tomoaki Tatsukawa and Takeshi Watanabe
Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan; Mazda Motor Cooperation, Japan

Session SNCC2: Symposium on Neuromorphic Cognitive Computing II
Friday, December 1, 10:45AM-12:45PM, Room: Iolani 3-4 (Tapa Tower), Chair: Gang Pan

10:45AM An Energy-Efficient Accelerator for Hybrid Bit-width DNNs [#1223]
Bo Liu, Xing Ruan, Mengwen Xia, Yu Gong, Jinjiang Yang, Wei Ge and Jun Yang
National ASIC System Engineering Technology Research Center, Southeast University, China

11:15AM Layer-wise synapse optimization for implementing neural networks on general neuromorphic architectures [#1373]
John Mern, Jayesh Gupta and Mykel Kochenderfer
Stanford University, United States

11:45AM Energy-efficient Hybrid CMOS-NEMS LIF Neuron Circuits in 28 nm CMOS Process [#1749]
Saber Moradi, Sunil Bhave and Rajit Manohar
Yale University, United States; Purdue University, United States

12:15PM ERMPPD: An Efficient and Robustness Membrane Potential Driven Supervised Learning in Spiking Neural Networks [#1557]
Yongqing Zhang, Yi Chen, Malu Zhang, Xi Wu, Jiliu Zhou and Hong Qu
Chengdu University of Information Technology, University of Electronic Science and Technology of China, China; University of Electronic Science and Technology of China, China; Chengdu University of Information Technology, China

Session CIBD1: Computational Intelligence in Big Data I
Friday, December 1, 10:45AM-12:45PM, Room: Nautilus (Kalia Tower), Chair: Spencer Thomas

10:45AM A Recommendation System by Collaborative Filtering Including Information and Characteristics on Users and Items [#1294]
Manami Kawasaki and Takashi Hasuike
Waseda University, Japan

11:15AM Kernel-based Generative Learning in Distortion Feature Space [#1304]
Bo Tang, Paul M. Baggenstoss and Haibo He
Mississippi State University, United States; Fraunhofer FKIE, Germany; University of Rhode Island, United States

11:45AM Where is Safe: Analyzing the Relationship between the Area and Emotion Using Twitter Data [#1389]
Saki Kitaoka and Takashi Hasuike
Waseda University, Japan; Waseda University, Japan
Session CISDA3: Computational Intelligence for Security and Defense Applications III  
Friday, December 1, 10:45AM-12:45PM, Room: Lehua (Kalia Tower), Chair: Svetlana Yanushkevich

10:45AM Age Estimation Based on Face Images and Pre-trained Convolutional Neural Networks  

Abhinav Anand, Ruggero Donida Labati, Angelo Genovese, Enrique Munoz, Vincenzo Piuri and Fabio Scotti  
University of Milan, Italy

11:15AM Utilizing Gait Traits to Improve e-Border Watchlist Performance  

Patrick Kozlow, Noor Abid and Svetlana Yanushkevich  
University of Calgary, Canada

11:45AM Forecasting Time Series from Clustering by a Memetic Differential Fuzzy Approach: An Application to Crime Prediction  

Cristian David Rodriguez Rodriguez, Diego Mayorga Gomez and Miguel Melgarejo Rey  
Universidad Distrital Francisco Jose de Caldas, Colombia

12:15PM Intelligent Sensor Attack Detection and Identification for Automotive Cyber-Physical Systems  

Jongho Shin, Youngmi Baek, Yongsun Eun and Sang Hyuk Son  
DGIST, Korea, Republic of

Session CIPLS3: Computational Intelligence in Production and Logistics Systems III  
Friday, December 1, 10:45AM-12:45PM, Room: Kahili (Kalia Tower), Chair: Beatrice Ombuki-Berman and Raymond Chiong

10:45AM Rescue Path Optimization Using Ant Colony Systems  

Manuela Graf, Marc Poy, Simon Bischof, Rolf Dornberger and Thomas Hanne  
University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

11:15AM A Column Generation-based Heuristic for a Green Vehicle Routing Problem with an Unlimited Heterogeneous Fleet  

Mario Ziebuhr, Tobias Buer and Herbert Kopfer  
University of Bremen, Computational Logistics, Germany; University of Bremen, Chair of Logistics, Germany

11:45AM An Age Layered Population Structure Genetic Algorithm for the Multi-Depot Vehicle Problem  

Audrey Opoku-Amankwaah and Beatrice Ombuki-Berman  
Brock University, Canada

12:15PM Reactive rescheduling method for electric vehicles charging in dedicated residential zone parking  

Nhan-Quy Nguyen, Farouk Yalaoui, Lionel Amodeo, Hicham Chehade and Pascal Toggeburger  
ICD, LOSI, Universite de Technologie de Troyes, UMR 6281, CNRS, France; Park'nPlug, France

Plenary Talk P-RiiSS: Intelligent Integrated Decision Control Approach for Cooperative Multi-Robotic System  
Friday, December 1, 10:45AM-11:45AM, Room: Hibiscus 1 (Kalia Tower), Speaker: Suresh Sundaram

Session RiiSS2: Symposium on Robotic Intelligence in Informationally Structured Space II  
Friday, December 1, 11:45AM-12:45PM, Room: Hibiscus 1 (Kalia Tower), Chair: Hiroyuki Masuta

11:45AM Evolving Adabot: A Mobile Robot with Adjustable Wheel Extensions  

Anthony Clark  
Missouri State University, United States
12:15PM  Centered Learning Model in Omni-directional Controller of Neural Oscillator Based Biped Locomotion [#1608]
Azhar Auila Saputra and Naoyuki Kubota
Tokyo Metropolitan University, Japan

Session CIDUE2: Computational Intelligence in Dynamic and Uncertain Environments II
Friday, December 1, 2:00PM-4:00PM, Room: Honolulu 1 (Tapa Tower), Chair: Wenjian Luo

2:00PM  A Hybrid Genetic Algorithm for Vehicle Routing Problems with Dynamic Requests [#1554]
Ruikang Yi, Wenjian Luo, Chenyang Bu and Xin Lin
University of Science and Technology of China, China

2:30PM  Environmental Variations Promotes Adaptation in Artificial Evolution [#1186]
Nicola Milano, Jonata Tyska Carvalho and Stefano Nolfi
Institute of Cognitive Sciences and Technologies National Research Council (CNR), Italy

Session DL3: Symposium on Deep Learning III
Friday, December 1, 2:00PM-4:00PM, Room: Honolulu 2 (Tapa Tower), Chair: Davide Bacciu

2:00PM  Weakly supervised learning with convolutional neural networks for power line localization [#1721]
Sang Jun Lee, Jong Pil Yun, Gyogwon Koo, Hyejeon Choi, Wookyong Kwon and Sang Woo Kim
POSTECH, Korea (South); Korea Institute of Industrial Technology (KITECH), Korea (South)

2:30PM  Cross-Subject Classification of Cognitive Loads Using a Recurrent-Residual Deep Network [#1169]
Magdiel Jimenez-Guarneros and Pilar Gomez-Gil
National Institute of Astrophysics, Optics and Electronics, Mexico

3:00PM  Soft sensor development and applications based on LSTM in deep neural networks [#1249]
Wensi Ke, Dexian Huang, Yang Fan and Yongheng Jiang
Department of Automation, Tsinghua University, China

3:30PM  LSTM Networks for Data-Aware Remaining Time Prediction of Business Process Instances [#1337]
Nicolo' Navarin, Beatrice Vincenzi, Mirko Polato and Alessandro Sperduti
University of Padova, Italy

Session ALIFE6: IEEE Artificial Life VI
Friday, December 1, 2:00PM-4:00PM, Room: Honolulu 3 (Tapa Tower), Chair: Chrystopher Nehaniv

2:00PM  Favoring the Evolution of Adaptive Robots Through Environmental Differentiation [#1116]
Jonata Tyska Carvalho and Stefano Nolfi
Center for Computational Sciences (C3), Federal University of Rio Grande (FURG), Brazil;
Institute of Cognitive Sciences and Technologies(ISTC), National Research Council(CNR), Italy

2:30PM  Evolving Robust, Deliberate Motion Planning With HyperNEAT [#1519]
Ben Jolley and Alastair Channon
School of Computing and Mathematics at Keele University, United Kingdom

3:00PM  Very Small Spiking Neural Networks Evolved to Recognize a Pattern in a Continuous Input Stream [#1732]
Muhammad Yaqoob and Borys Wrobel
Adam Mickiewicz University, Poznan, Poland

3:30PM
Fuzzy Decision Making in an Agent-Based Model of Non-Industrial Private Forest Owners
[#1417]
Robert Zupko
Michigan Technological University, United States

Session CIBD2: Computational Intelligence in Big Data II
Friday, December 1, 2:00PM-4:00PM, Room: Coral 5, Chair: Spencer Thomas

2:00PM On Applying the Restricted Boltzmann Machine to Active Concept Drift Detection [#1720]
Maciej Jaworski, Piotr Duda and Leszek Rutkowski
Institute of Computational Intelligence, Czestochowa University of Technology, Poland

2:30PM Learning Autoencoded Radon Projections [#1030]
Aditya Sriram, Shivam Kalra, H.R. Tizhoosh and Shahryar Rahnamayan
University of Waterloo, Canada; University of Ontario Institute of Technology, Canada

3:00PM Enhancing Classification of Mass Spectrometry Imaging Data with Deep Neural Networks [#1418]
Spencer Thomas, Yaochu Jin, Josephine Bunch and Ian Gilmore
National Physical Laboratory, United Kingdom; University of Surrey, United Kingdom

Session CIMSIVP2: Computational Intelligence for Multimedia, Signal and Vision Processing II
Friday, December 1, 2:00PM-4:00PM, Room: Iolani 3-4 (Tapa Tower), Chair: Khan Iftekharuddin

2:00PM Advanced human motion analysis and visualization: comparison of mawashi-geri kick of two elite karate athletes [#1493]
Tomasz Hachaj, Marek R. Oguled, Marcin Piekarczyk and Katarzyna Kopytya
Pedagogical University of Krakow, Institute of Computer Science, Poland; AGH University of Science and Technology, Poland

2:30PM Block-based Feature Extraction Model for Early Fire Detection [#1215]
Kuang-Pen Chou, Mukesh Prasad, Deepak Gupta, Sharmi Sankar, Ting-Wei Hsu, Suresh Sundaram, Chin-Teng Lin and Wen-Chieh Lin
National Chiao Tung University, Taiwan; University of Technology Sydney, Australia; National Institute of Technology, India; Ibri College of Applied Sciences, Oman; Nanyang Technological University, Singapore

3:00PM Software Constraints for Caves' Virtual Environments Modeling [#1716]
Andrea Zambrano, Oswaldo Padilla Almeida, Theofilos Toulkeridis, Judith Zapata, Eduardo Ordonez and Fernando Mato
Universidad de las Fuerzas Armadas ESPE, Ecuador; Instituto Espacial Ecuatoriano IEE, Ecuador

3:30PM The open online repository of karate motion capture data: a tool for scientists and sport educators [#1494]
Tomasz Hachaj, Marek R. Oguled and Marcin Piekarczyk
Pedagogical University of Krakow, Institute of Computer Science, Poland; AGH University of Science and Technology, Cryptography and Cognitive Informatics Research Group, Poland

Session CISDA4: Computational Intelligence for Security and Defense Applications IV
Friday, December 1, 2:00PM-4:00PM, Room: Lehua (Kalia Tower), Chair: Marco Cococcioni

2:00PM An Analysis of Tor Pluggable Transports Under Adversarial Conditions [#1070]
Khalid Shahbar and A. Nur Zincir
Dalhousie University, Canada

2:30PM Data Loss Prevention for Cross-Domain Instant Messaging [#1082]
Kyrre Wahl Kongsgaard, Nils Nordbotten, Federico Mancini and Paal E. Engelstad
Norwegian Defense Research Establishment, Norway

3:00PM
Data Analytics for Modeling and Visualizing Attack Behaviors: A Case Study on SSH Brute Force Attacks [#1190]
Chengchao Yao, Xiao Luo and Nur A. Zincir-Heywood
Dalhousie University, Canada; Indiana University-Purdue University Indianapolis, United States

3:30PM A Nature-inspired Decision System for Secure Cyber Network Architecture [#1548]
Neal Wagner, Cem Sahin, Pena Jaime and Streilein William
Massachusetts Institute of Technology Lincoln Laboratory, United States