IJCNN 2018 Preliminary Program - 13/06/2018

Session 2: Machine Learning
Monday, July 9, 8:00AM-10:00AM, Room: Oceania 4, Chair: Daniel Kottke and Akshya Swain

8:00AM The Other Human in The Loop - A Pilot Study to Find Selection Strategies for Active Learning [#18690]
Daniel Kottke, Adrian Calma, Denis Huseljic, Christoph Sandrock, George Kachergis and Bernhard Sick
University of Kassel, Germany; Radboud University, Germany

8:20AM Coupled Analysis Dictionary Learning to inductively learn inversion: Application to real-time reconstruction of Biomedical signals [#18700]
Kavya Gupta, Brojeshwar Bhowmick and Angshul Majumdar
Embedded Systems and Robotics, TCS Research and Innovation, India, India; Indraprastha Institute of Information Technology Delhi, India, India

8:40AM Active Sorting - An Efficient Training of a Sorting Robot with Active Learning Techniques [#18776]
Marek Herde, Daniel Kottke, Adrian Calma, Maarten Bieshaar, Stephan Deist and Bernhard Sick
Intelligent Embedded Systems, University Kassel, Germany

9:00AM Improved Learning from Small Data Sets Through Effective Combination of Machine Learning Tools with VSG Techniques [#18085]
Chathura Wanigasekara, Akshya Swain, Sing Kiong Nguang and Gangadhara B Prusty
The University of Auckland, New Zealand; The University of New South Wales, Australia

9:20AM Version Space Completeness for Novel Hypothesis Induction in Biomedical Applications [#18301]
Jinyan Li
University of Technology Sydney, Australia

9:40AM Exponential Family Restricted Boltzmann Machines and Annealed Importance Sampling [#18777]
Yifeng Li and Xiaodan Zhu
Digital Technologies Research Centre, National Research Council Canada, Canada; Department of Electrical and Computer Engineering, Queen's University, Canada

Session 8k-1: Signal processing, image processing, and multi-media
Monday, July 9, 8:00AM-10:00AM, Room: Oceania 5, Chair: Frank H. F. Leung and Anurag Mishra

8:00AM Lifting Wavelet Transform based Fast Watermarking of Video Summaries using Extreme Learning Machine [#18718]
Anurag Mishra, Charu Agarwal and Girija Chetty
University of Delhi, Delhi, India; A K Garg College of Engg, Ghaziabad, India; University of Canberra, Australia, Australia

8:20AM Neuro - Fuzzy Architecture for Gray Scale Image Watermarking using Fractal Dimensions [#18144]
Anurag Mishra, Khushwant Sehra and Girija Chetty
University of Delhi, Delhi, India; GGSIP University, Delhi, India; University of Canberra, Australia, Australia

8:40AM Analysis and Improvement of convergence speed in kernel adaptive filters with nonlinear even cost function and pre-tuned dictionary [#18590]

Eden P. da Silva, Carlos A. Estombelo-Montesco, Ewaldo Santana and Leonardo N. Matos

Computer Science Post-Graduate Program - UFS, Brazil; Computer Science Department - UFS, Brazil; Math Department - UEMA, Brazil

9:00AM The Scalable Version of Probabilistic Linear Discriminant Analysis and Its Potential as A Classifier for Audio Signal Classification [#18610]

Yuechi Jiang and Frank H. F. Leung

The Hong Kong Polytechnic University, China; The Hong Kong Polytechnic University, Hong Kong

9:20AM Comparing the Use of Sum and Difference Histograms and Gray Levels Occurrence Matrix for Texture Descriptors [#18808]

Adriel Araujo, Aura Conci, Roger Resmini and Maira Moran

Universidade Federal Fluminense, Brazil; Universidade Federal de Mato Grosso, Brazil

9:40AM Artificial Neural Networks For Dictionary Selection in Adaptive Greedy Decomposition Algorithms With Reduced Complexity [#18823]

Gabriel Oliveira, Michel Tcheou and Lisandro Lovisolo

Rio de Janeiro State University, Brazil

Session 1-2: Neural Networks Models

Monday, July 9, 8:00AM-10:00AM, Room: Oceania 6, Chair: Alan L. S. Matias and Alessio Petrozziello

8:00AM Fuzzy ART-based Classification via Sparse Bayesian learning [#19003]

Alan L. S. Matias, Lucas S. de Sousa, Ajalmar R. da Rocha Neto and Joao Paulo P. Gomes

Federal University of Ceara, Brazil; Federal Institute of Ceara, Brazil

8:20AM Efficient Optimization of Echo State Networks for Time Series Datasets [#18990]

Jacob Reinier Maat, Nikos Gianniotis and Pavlos Protopapas

Harvard University, United States; Heidelberg Institute for Theoretical Studies, Germany

8:40AM Interpretive Reservoir: A Preliminary Study on The Association Between Artificial Neural Network and Biological Neural Network [#19085]

Wei Wang, Yang Gao and Zhanpeng Jin

University at Buffalo, State University of New York, United States

9:00AM Evaluation of Information-Theoretic Measures in Echo State Networks on the Edge of Stability [#18356]

Miloslav Torda and Igor Farkas

Comenius University in Bratislava, Slovakia

9:20AM Neuromorphic Array Communications Controller to Support Large-Scale Neural Networks [#18183]

Aaron Young, Mark Dean, James Plank, Garrett Rose and Catherine Schuman

University of Tennessee, United States; Oak Ridge National Laboratory, United States

9:40AM Distributed Neural Networks for Missing Big Data Imputation [#18148]

Alessio Petrozziello, Ivan Jordanov and Christian Sommeregger

University of Portsmouth, United Kingdom; Expedia Inc., United Kingdom

Session 2c: Self-organizing maps

Monday, July 9, 8:00AM-10:00AM, Room: Oceania 7, Chair: Matthias Kerzel and Yiming Peng

8:00AM Accelerating Deep Continuous Reinforcement Learning through Task Simplification [#18508]

Matthias Kerzel, Hadi Beik Mohammadi, Mohammad Ali Zamani and Stefan Wermter

University of Hamburg, Germany

8:20AM AC2: A Policy Gradient Actor with Primary and Secondary Critics [#18649]

Alfonso Labao and Prospero, Jr. Naval
University of the Philippines, Philippines

8:40AM Kernelized Q-Learning for Large-Scale, Potentially Continuous, Markov Decision Processes [#18546]
Isaac Sledge and Jose Principe
University of Florida, United States

9:00AM Continuous Control with a Combination of Supervised and Reinforcement Learning [#18869]
Dmitry Kangin and Nicolas Pugeault
University of Exeter, United Kingdom

9:20AM Constrained Expectation-Maximization Methods for Effective Reinforcement Learning [#18220]
Gang Chen, Yiming Peng and Mengjie Zhang
Victoria University of Wellington, New Zealand

9:40AM Incremental Adaptive EEG Classification of Motor Imagery-based BCI [#18215]
Hai-Jun Rong, Changjun Li, Rong-Jing Bao and Badong Chen
Xi'an Jiaotong University, China

Session CDS-CI: Special Session on Computational Intelligence
Monday, July 9, 8:00AM-10:00AM, Room: Oceania 8, Chair: Ariel Ruiz-Garcia and Manuel Roveri

8:00AM Natural Language Processing approach to NLP Meta model automation [#18034]
Mohammad Hossein Amirhosseini, Hassan Kazemian, Karim Ouazzane and Chris Chandler
London Metropolitan University, United Kingdom

8:20AM Physiological-Based Emotion Detection and Recognition in a Video Game Context [#18753]
Yang Wenlu, Rifqi Maria, Marsala Christophe and Pinna Andrea
Lip6, University of Paris 6, France; LEMMA, University of Paris 2, France

8:40AM Deep Learning for Illumination Invariant Facial Expression Recognition [#19071]
Ariel Ruiz-Garcia, Vasile Palade, Mark Elshaw and Ibrahim Almakky
Coventry University, United Kingdom

9:00AM Reducing the Computation Load of Convolutional Neural Networks through Gate Classification [#18197]
Simone Disabato and Manuel Roveri
Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria, Italy

9:20AM Online shortest paths with confidence intervals for routing in a time varying random network [#18716]
Stephane Chretien and Christophe Guyeux
National Physical Laboratory, United Kingdom; University de Bourgogne Franche-Comte, France

9:40AM Short-term Traffic Flow Forecasting Using Transfer Ratio and Road Similarity [#18959]
De Guo, Meng Chen, Xiaohui Yu and Yang Liu
School of Computer Science and Technology, Shandong University, China; School of Information Technology, York University, Canada; School of Computer Science and Technology, Shandong University, China; School of Information Technology, York University, Canada; School of Computer Science and Technology, Shandong University, China; Department of Physics and Computer Science, Wilfrid Laurier University, Canada

Session SS16-1: Special Session on Hybrid Neural Intelligent Models and Applications
Monday, July 9, 8:00AM-10:00AM, Room: Oceania 9, Chair: Patricia Melin and Alma Alanis

8:00AM Recurrent High Order Neural Networks Identification for Infectious Diseases [#18093]
Gustavo Hernandez-Mejia, Alma Y. Alanis, Nancy Arana-Daniel and Esteban A. Hernandez-Vargas
Frankfurt Institute for Advanced Studies, Germany; Universidad de Guadalajara, Mexico

8:20AM Restricted Boltzmann Machines for the Prediction of Trends in Financial Time Series [#18321]
Carlos Assis, Adriano Pereira, Eduardo Carrano, Rafael Silva and Wanderson Dias
Centro Federal de Educacao Tecnologica de Minas Gerais, Brazil; Universidade Federal de Minas Gerais, Brazil

8:40AM Attitude Estimation of Unmanned Aerial Vehicle Based on LSTM Neural Network [#18720]
Yaohua Liu, Yimin Zhou and Xiang Li
Guilin University Of Electronic Technology, China; Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, 1068 Xueyuan Avenue, Xili University Town, Shenzhen, China,, China

9:00AM Wind Speed and Solar Irradiance Prediction Using Advanced Neuro-Fuzzy Inference System [#18755]
Shihabudheen Kv and Gopinath Pillai
Department of Electrical Engineering Indian Institute of Technology Roorkee Roorkee, India, India

9:20AM Prototype-based Clustering for Relational Data using Barycentric Coordinates [#18117]
Parisa Rastin and Basarab Matei
University of Paris 13, France

9:40AM Optimal Neural control of a Two Stages Anaerobic Digestion Model for Biofuels Production [#18487]
Kelly J. Gurubel, Edgar N. Sanchez, Alberto Coronado, Virgilio Zuniga and Belkis Sulbaran
Universidad de Guadalajara, Mexico; Cinvestav Guadalajara, Mexico

Session SS1: Special Session Non-iterative Approaches in Learning
Monday, July 9, 8:00AM-10:00AM, Room: Oceania 10, Chair: P. N. Suganthan and Filippo Maria Bianchi

8:00AM Twitter Sentiment Classification Based on Deep Random Vector Functional Link [#18237]
Pablo Henriquez and Gonzalo Ruz
Universidad Adolfo Ibanez, Chile

8:20AM Fourier-Bessel series expansion based technique for automated classification of focal and non-focal EEG signals [#18503]
Swastik Gupta, Konduri Hari Krishna, R.B. Pachori and M. Tanveer
Indian Institute of Technology Indore, India

8:40AM Secant manifold constrained random projections -- Improved cluster ensembles [#19014]
Jonas Nordhaug Myhre
UiT - The Arctic University of Norway, Norway

9:00AM Pareto cascade modeling of diffusion networks [#18032]
Xin Dang, Christopher Ma, Yixin Chen and Dawn Wilkins
University of Mississippi, United States; Univeristy of Mississippi, United States

9:20AM An Analytic Solution to the Inverse Ising Problem in the Tree-reweighted Approximation [#18607]
Takashi Sano
National Institute of Advanced Industrial Science and Technology, Japan

9:40AM Enhancing Multi-Class Classification of Random Forest using Random Vector Functional Neural Network and Oblique Decision Surfaces [#18719]

Rakesh Katuwal and Ponnuthurai Nagaratnam Suganthan
Nanyang Technological University, Singapore

Plenary Talk PL1: Cyborg Intelligence: Towards the Convergence of Machine and Biological Intelligence, Zhaohui Wu
Monday, July 9, 1:00PM-2:00PM, Room: ASIA 1, Chair: Asim Roy

Session SS38: Neural Approaches for Natural Language
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 2, Chair: Marco Pota and Massimo Esposito

2:10PM Evaluating the impact of corpora used to train distributed text representation models for noisy and short texts [#18694]
Johannes Lochter, Pedro Pires, Carlos Bossolani, Akebo Yamakami and Tiago Almeida
DSE - FEEC - UNICAMP, Brazil; DComp - UFSCar, Brazil

2:30PM A "Deeper" Look at Detecting Cyberbullying in Social Networks [#18754]
Hugo Rosa, David Matos, Ricardo Ribeiro, Luisa Coheur and Joao P, Carvalho
INESC-ID / Instituto Superior Tecnico, Universidade de Lisboa, Portugal; INESC-ID / ISCTE-IUL, Instituto Universitario de Lisboa, Portugal

2:50PM Do Deep Networks Really Need Complex Modules for Multilingual Sentiment Polarity Detection and Domain Classification? [#18804]
Lisa Medrouk and Anna Pappa
University of Paris 8, France

3:10PM Norm Conflict Identification using Vector Space Offsets [#18903]
Joao Paulo Aires, Roger Granada, Juarez Monteiro and Felipe Meneguzzi
PUCRS, Brazil

3:30PM Using Semantic Clustering and Autoencoders for Detecting Novelty in Corpora of Short Texts [#18711]
Mei Mei, Xinyu Guo, Belinda Williams, Simona Doboli, Jared Kenworthy, Paul Paulus and Ali Minai
University of Cincinnati, United States; University of Texas at Arlington, United States; Hofstra University, United States

3:50PM Question Classification by Convolutional Neural Networks Embodying Subword Information [#19126]
Marco Pota and Massimo Esposito
Institute for High Performance Computing and Networking (ICAR-CNR), Italy

Session 2r-2s: Hybrid learning and Computational power of neural networks
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 4, Chair: David Simoes and Rohitash Chandra

2:10PM A Two-stage Vehicle Type Recognition Method [#18473]
Fei Gao, Zhijing He, Yisu Ge, Shufang Lu and Yuanming Zhang
College of Computer Science and Technology, Zhejiang University of Technology, China

2:30PM Collaborative Multi-View Attributed Networks Mining [#18772]
Issam Falih, Nistor Grozavu, Rushed Kanawati, Younes Bennani and Basarab Matei
LIPN-CNRS, UMR 7030, Paris 13 University, France

2:50PM Guided Deep Reinforcement Learning in the GeoFriends2 Environment [#18337]
David Simoes, Nuno Lau and Luis Paulo Reis
Institute of Electronics and Informatics Engineering of Aveiro, University of Aveiro, Portugal; Informatics Engineering Department, Faculty of Engineering of the University of Porto,

Portugal

3:10PM Socrates-D 2.0: A Low Power High Throughput Architecture for Deep Network Training [#19079]
Yangjie Qi, Raqibul Hasan and Tarek Taha
Mr., United States; Dr., United States

3:30PM Bayesian Multi-task Learning for Dynamic Time Series Prediction [#18642]
Rohitash Chandra and Sally Cripps
Centre for Translational Data Science, University of Sydney, Australia

3:50PM A Reinforcement Learning Method for Continuous Domains Using Artificial Hydrocarbon Networks [#19098]
Hiram Ponce, Guillermo Gonzalez-Mora and Lourdes Martinez-Villasenor
Universidad Panamericana, Mexico

Session 1h-1: Spiking neural networks
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 5, Chair: Ruizhi Chen and Angeliki Pantazi

2:10PM Low Latency Spiking ConvNets with Restricted Output Training and False Spike Inhibition [#18057]
Ruizhi Chen and Hong Ma
University of Chinese Academy of Sciences, China; CASIA, China

2:30PM Fast and Efficient Deep Sparse Multi-Strength Spiking Neural Networks with Dynamic Pruning [#18295]
Ruizhi Chen and Hong Ma
University of Chinese Academy of Sciences, China; CASIA, China

2:50PM A Supervised Multi-Spike Learning Algorithm for Spiking Neural Networks [#18469]
Yu Miao, Huajin Tang and Gang Pan
Sichuan University, China; Zhejiang University, China

3:10PM Multi-Class and Multi-Label Classification Using Associative Pulsing Neural Networks [#18867]
Adrian Horzyk and Janusz A. Starzyk
AGH University of Science and Technology, Poland; University of Information Technology and Management in Rzeszow, and School of EECS, Ohio University, United States

3:30PM Spiking Locality-Sensitive Hash: Spiking Computation with Phase Encoding Method [#18702]
Ziru Wang, Yongqiang Ma, Zhiwei Dong, Nanning Zheng and Pengju Ren
Xi'an jiaotong University, China; Xi'an Jiaotong University, China

3:50PM Online Feature Learning from a non-i.i.d. Stream in a Neuromorphic System with Synaptic Competition [#18228]
Stanislaw Wozniak, Angeliki Pantazi, Yusuf Leblebici and Evangelos Eleftheriou
IBM Research - Zurich, Switzerland; Ecole Polytechnique Federale de Lausanne, Switzerland

Session 6c-1: Neuromorphic hardware
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 6, Chair: Vladimir Kornijcuk and Haowen Fang

2:10PM Pointer Based Routing Scheme for On-chip Learning in Neuromorphic Systems [#18299]
Vladimir Kornijcuk and Doo Seok Jeong
Korea Institute of Science and Technology, Korea (South)

2:30PM Low Power Memristor Crossbar Based Winner Takes All Circuit [#19022]
B Rasitha Fernando, Raqibul Hasan and Tarek M Taha
University of Dayton, United States

2:50PM Domain Wall Motion-based XOR-like Activation Unit with A Programmable Threshold [#19066]
Suman Deb, Anupam Chattopadhyay, Arindam Basu and Xuanyao Fong
NTU, Singapore; NUS, Singapore

3:10PM Analysis and Implementation of Simple Dynamic Binary Neural Networks [#18632]
Shunsuke Aoki, Seitaro Koyama and Toshimichi Saito
HOSEI University, Japan

3:30PM Spike Counts Based Low Complexity Learning with Binary Synapse [#19063]
Hoyoung Tang, Heetak Kim, Donghyeon Cho and Jongsun Park
School of Electrical Engineering, Korea University, Korea (South)

3:50PM Scalable NoC-based Neuromorphic Hardware Learning and Inference [#18995]
Haowen Fang, Amar Shrestha, De Ma and Qinru Qiu
Syracuse University, United States; Zhejiang University, China

Session Best-Reg: Best Papers
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 7, Chair: Asim Roy, Manuel Roveri and Zeng-Guang Hou

2:10PM Unsupervised Learning with Self-Organizing Spiking Neural Networks [#18836]
Hananel Hazan, Daniel Saunders, T, Darpan Sanghavi, Hava Siegelmann and Kozma Robert
University of Massachusetts Amherst, United States

2:30PM Deep Tree Echo State Networks [#18890]
Claudio Gallicchio and Alessio Micheli
Department of Computer Science, University of Pisa, Italy

2:50PM Early Seizure Detection with an Energy-Efficient Convolutional Neural Network on an Implantable Microcontroller [#18803]
Maria Huegle, Simon Heller, Manuel Watter, Manuel Blum, Farrokh Manzouri, Matthias Duempelmann, Andreas Schulze-Bonhage, Peter Woias and Joschka Boedecker
University of Freiburg, Germany

3:10PM Accelerating model-based collaborative filtering with item clustering [#18010]
Robin Devooght and Hugues Bersini
IRIDIA-ULB, Belgium

3:30PM A Redescriptive Approach to Autonomous Perceptual Classification in Robotic Cognitive Architectures [#18782]
Jose Antonio Becerra, Richard J. Duro and Juan Monroy
Universidade da Coruna, Spain

Session SS16-2: Special Session on Hybrid Neural Intelligent Models and Applications
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 8, Chair: Patricia Melin and Alma Alanis

2:10PM Interval Type-2 Fuzzy weighted Extreme Learning Machine for GDP Prediction using CO2 emissions [#19117]
Amit K. Shukla, Sandeep Kumar, Rishi Jagdev, Pranab K. Muhuri and Q. M. Danish Lohani
South Asian University, India

2:30PM Neural inverse optimal pinning control for synchronization of complex networks with nonidentical chaotic nodes [#18562]
Carlos J. Vega and Edgar N. Sanchez
CINVESTAV, Mexico

2:50PM Hybrid neural models for automatic handwritten digits recognition [#18490]

Aline A. Peres, Susana M. Vieira and Joao R. Caldas Pinto
IDMEC, Instituto Superior T\'ecnico, Universidade de Lisboa, Portugal

3:10PM Differential Evolution and Covariance Ellipsoid for non-rigid transformation tracking of internal organs [#18926]
Carlos Villasenor, Nancy Arana-Daniel, Alma Y. Alanis and Carlos Lopez-Franco
University of Guadalajara, Mexico

Session 2k-1: Mixture models, ensemble learning, and other meta-learning or committee algorithms
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 9, Chair: George Cavalcanti and Rafael Cruz

2:10PM An Ensemble Generation Method Based on Instance Hardness [#28011]
Felipe Walmsley, George Cavalcanti, Dayvid Oliveira, Rafael Cruz and Robert Sabourin
Centro de Informatica - Universidade Federal de Pernambuco, Brazil; Ecole de Technologie Superieure - Universite du Quebec, Canada

2:30PM A Spatiotemporal Ensemble Approach to Rainfall Forecasting [#18994]
Yania Molina Souto, Fabio Andre Machado Porto, Ana Maria Moura and Eduardo Bezerra
LNCC, Brazil; CEFET, Brazil

2:50PM The Optimized Selection of Base-Classifiers for Ensemble Classification using a Multi-Objective Genetic Algorithm [#18580]
Sam Fletcher, Brijesh Verma, Zohaib M Jan and Mengjie Zhang
Central Queensland University, Australia; Victoria University of Wellington, New Zealand

3:10PM K-Nearest Oracles Borderline Dynamic Classifier Ensemble Selection [#28017]
Dayvid V. R. Oliveira, George D. C. Cavalcanti, Thyago N. Porpino, Rafael M. O. Cruz and Robert Sabourin
Universidade Federal de Pernambuco, Brazil; Ecole de Technologie Superieure, Canada

3:30PM An empirical analysis of Combined Dissimilarity Spaces [#28008]
Leticia Lapenda, Roberto Pinheiro and George Cavalcanti
Universidade Federal de Pernambuco, Brazil; Universidade Federal do Cariri, Brazil

3:50PM Information Collection Strategies in Memetic Cooperative Neuroevolution for Time Series Prediction [#18646]
Gary Wong, Anuraganand Sharma and Rohitash Chandra
The University of the South Pacific, Fiji; The University of Sydney, Australia

Session 1a-1: Feedforward neural networks
Monday, July 9, 2:10PM-4:10PM, Room: Oceania 10, Chair: David Diaz-Vico and Nitish Patel

2:10PM Deep MLPs for Imbalanced Classification [#18118]
David Diaz-Vico, Anibal R. Figueiras-Vidal and Jose R. Dorronsoro
UAM, Spain; UC3M, Spain

2:30PM Grey-Box Neural Network System Identification with Transfer Learning on Ball and Beam System [#18842]
Joseph Kit Pui Tsoi, Nitish Dhirubhai Patel and Akshya Kumar Swain
University of Auckland, New Zealand

2:50PM Deep Hybrid Real-Complex-Valued Convolutional Neural Networks for Image Classification [#18170]
Calin-Adrian Popa
Polytechnic University Timisoara, Romania

3:10PM Complex-Valued Deep Boltzmann Machines [#18761]
Calin-Adrian Popa

Polytechnic University Timisoara, Romania

3:30PM Image Purification Networks: Real-time Style Transfer with Semantics through Feed-forward Synthesis [#18100]
Tongtong Zhao, Yuxiao Yan, Ibrahim Shehi Shehu and Xianping Fu
Dalian Maritime University, China

3:50PM Parameter Transfer Extreme Learning Machine based on Projective Model [#18106]
Chao Chen, Boyuan Jiang and Xinyu Jin
Zhejiang University, China

Session WT1: Workshop on Computational Intelligence and Smart Cities
Monday, July 9, 2:10PM-4:10PM, Room: Aruba, Chair: Vitor Coelho and Igor Coelho

2:10PM Computational Intelligence and Adaptation in VANETs: Current Research and New Perspectives [#18279]
Marcia Pasin, Amal El Fallah Seghrouchni, Assia Belbachir, Sarajane Marques Peres and Anarosa Alves Franco Brandao
Universidade Federal de Santa Maria, Brazil; Sorbonne Universite, France; Institut Polytechnique des Sciences Avancees, France; Universidade de Sao Paulo, Brazil

2:30PM Formalization and certification of software for Smart Cities [#18385]
Erick Grilo and Bruno Lopes
Universidade Federal Fluminense, Brazil

2:50PM Citizens and Information and Communication Technologies [#19009]
Thays A. Oliveira, Alexandre C. Barbosa, Helena Ramalhinho and Miquel Oliver
Universitat Pompeu Fabra, Spain; KU Leuven, Belgium, Belgium

3:10PM Logistics SLA Optimization Service for Transportation in Smart Cities [#18934]
Edcarllos Santos, Puca Huachi Penna, Igor Machado Coelho, Heder Dorneles Soares, Luiz Satoru Ochi and Luidi Simonetti
Universidade Federal Fluminense, Brazil; Universidade Federal de Ouro Preto, Brazil; Universidade do Estado do Rio de Janeiro, Brazil; Universidade Federal do Rio de Janeiro, Brazil

3:30PM Cryptocurrencies for Smart Territories: an exploratory study [#18923]
Alexandre Barbosa, Thays Oliveira and Vitor Coelho
KU Leuven, Belgium; Universitat Pompeu Fabra, Spain; Universidade Federal Fluminense, Brazil

Plenary Poster Session POS1: Poster Session 1
Monday, July 9, 4:10PM-6:30PM, Room: Europa II , Chair: Leandro Minku and Rodrigo Soares

P101 Deep Learning Approaches to Chemical Property Prediction from Brewing Recipes [#18003]
Gracie Ermi, Ellyn Ayton, Nolan Price and Brian Hutchinson
Vulcan Inc., United States; Western Washington University, United States; Western Washington University and Pacific Northwest National Laboratory, United States

P102 Interaction of CBC Loops Involved in Working Memory Feedback Training [#18014]
Jiahui Shen, Airu Pang, Li Yao and Xiaojie Zhao
School of Cyber Security, University of Chinese Academy of Sciences, China; College of Information Science and Technology, Beijing Normal University, China

P103 Nominal Data Similarity: A Hierarchical Measure [#18017]
Hao Yu, Zhaoning Zhang, Zijie Zhu, Wang Xiong and Gen Zhang
National University of Defense Technology, China

P104 Adaptive Missing Data Imputation with Incremental Neuro-Fuzzy Gaussian Mixture Network (INFGMN) [#18018]

Tiago Mazzutti, Mauro Roisenberg and Paulo de Freitas Filho

Universidade Federal de Santa Catarina - UFSC, Instituto Federal Catarinense - IFC, Brazil; Universidade Federal de Santa Catarina - UFSC, Brazil

P105 Diagonalwise Refactorization: An Efficient Training Method for Depthwise Convolutions [#18019]

Zheng Qin, Zhaoning Zhang, Dongsheng Li, Yiming Zhang and Yuxing Peng

National University of Defense Technology, China

P106 Extract Generalization Ability from Convolutional Neural Networks [#18025]

Huan Wu, JunMin Wu and Jie Ding

University of Science and Technology of China, China

P107 Image Clustering Based on Supervised Graph Regularized Discriminative Concept Factorization [#18038]

Xianzhong Long and Yun Li

Nanjing University of Posts and Telecommunications, China

P108 Sparsity-Aware Distributed Adaptive Filtering Algorithms for Nonlinear System Identification [#18040]

Robson Antonio do Prado, Felipe da Rocha Henriques and Diego Barreto Haddad

CEFET-RJ, Brazil

P109 Online Max-flow Learning via Augmenting and De-augmenting Path [#18043]

Shaoning Pang, Lei Zhu, Tao Ban, Kazushi Ikeda, Wangfei Zhang, Abdolhossein Sarrafzadeh, Takeshi Takahashi and Daisuke Inoue

Unitec Institute of Technology, New Zealand; National Institute of Information and Communications Technology, Japan; Nara Institute of Science and Technology, Japan; Southwest Forestry University, China

P110 Cross-modal Metric Learning with Graph Embedding [#18067]

Youcai Zhang and Xiaodong Gu

Department of Electronic Engineering, Fudan University, China

P111 Hierarchical Laplacian Score for unsupervised feature selection [#18071]

Nhat-Quang Doan, Hanane Azzag and Mustapha Lebbah

University of Hanoi, Viet Nam; University of Paris 13, France

P112 Multi ROI and Multi Map Networks for Accurate and Efficient Pedestrian Detection [#18080]

Zhe Qiu and Xiaodong Gu

Department of Electronic Engineering, Fudan University, China

P113 On Evaluating Data Preprocessing Methods for Machine Learning Models for Flight Delays [#18092]

Leonardo Moreira, Christofer Dantas, Leonardo Oliveira, Jorge Soares and Eduardo Ogasawara

CEFET/RJ, Brazil

P114 Artificial Neural Networks Applied in the Solution of the Inverse Kinematics Problem of a 3D Manipulator Arm [#18095]

Jonatas Favotto Favoto Dalmedico, Marcio Mendonca, Lucas Botoni de Souza, Ruan Victor P. Duarte Barros and Ivan Rossato Chrun

UTFPR (DAMEC), Brazil; UTFPR (DAELE), Brazil; UTFPR (CPGEI), Brazil

P115 Emotion Recognition from Multi-Channel EEG through Parallel Convolutional Recurrent Neural Network [#18110]

Yilong Yang, Qingfeng Wu, Ming Qiu, Yingdong Wang and Xiaowei Chen

Software school of Xiamen University, China

P116 Two-stage Unsupervised Multiple Kernel Extreme Learning Machine [#18111]

Guohan Zhao, Lingyun Xiang, Chengzhang Zhu and Li Feng

School of Computer and Communication Engineering ChangSha University of Science and Technology, China; School of Computer and Communication Engineering ChangSha University of Science and Technology, Hunan Provincial Key Laboratory of Intelligent Processing of Big Data on Transportation, Changsha University of Science and Technology, Hunan Provincial Key La, China; Advanced Analytics Institute, University of Technology Sydney, Australia

P117 Selective Expression for Event Coreference Resolution on Twitter [#18128]

Wei Ping, Chao Wenhan, Luo Zhunchen and Liu Xiao

Beihang University, China; PLA Academy of Military Science, China; Beijing Institute of Technology, China

P118 SeriesNet:A Generative Time Series Forecasting Model [#18135]

Zhipeng Shen, Yuanming Zhang, Jiawei Lu, Jun Xu and Gang Xiao

Zhejiang University of Technology, China

P119 Learning to Rank with Deep Autoencoder Features [#18138]

Albuquerque Alberto, Amador Tiago, Ferreira Renato, Veloso Adriano and Ziviani Nivio

Universidade Federal de Minas Gerais, Brazil; Kunumi and Universidade Federal de Minas Gerais, Brazil

P120 LSTM-based Flight Trajectory Prediction [#18139]

Zhiyuan Shi, Min Xu, Quan Pan, Bing Yan and Haimin Zhang

Northwestern Polytechnical University, China; University of Technology Sydney, Australia

P121 An Optimal Variable Subspace Selection Scheme for Multivariate Time Series Classification [#18146]

Chen Zeng, Guoliang He, Qingfeng Wei, Jinrong He, Xiaoying Wu and Yuanxiang Li

Wuhan University, China; North West Agriculture and Forestry University, China

P122 Time series kernel similarities for predicting Paroxysmal Atrial Fibrillation from ECGs [#18149]

Filippo Maria Bianchi, Lorenzo Livi, Alberto Ferrante, Jelena Milosevic and Miroslaw Malek

UiT the Arctic University of Norway, Norway; University of Exeter, United Kingdom; Universita' della Svizzera italiana, Switzerland; TU Wien, Austria

P123 Video-based Disguise Face Recognition Based on Deep Spiking Neural Network [#18157]

Daqi Liu and Shigang Yue

University of Lincoln, United Kingdom

P124 Statistical versus Distance-Based Meta-Features for Clustering Algorithm recommendation Using Meta-Learning [#18166]

Bruno Pimentel and Andre Carvalho

Instituto de Ciencias Matematicas e de Computacao (ICMC-USP), Brazil

P125 Analysing rotation-invariance of a log-polar transformation in convolutional neural networks [#18175]

Marta Amorim, Frederico Bortoloti, Patrick Marques Ciarelli, Elias Oliveira and Alberto F. De Souza

UFES, Brazil

P126 A bio-inspired SOSNN model for object recognition [#18188]

Jiaxing Liu and Guoping Zhao

Shanghai Jiao Tong University, China; Renmin University of China, China

P127 MNRD: A Merged Neural Model for Rumor Detection in Social Media [#18198]

Nan Xu, Guandan Chen and Wenji Mao

Institute of Automation, Chinese Academy of Sciences, China

P128 Towards Safer (Smart) Cities: Discovering Urban Crime Patterns Using Logic-based Relational

Machine Learning [#18685]
Vitor Lourenco, Paulo Mann, Artur Guimaraes, Aline Paes and Daniel de Oliveira
Department of Computer Science, Universidade Federal Fluminense, Brazil

P129 Learning Useful Representations Through Stacked Self-Organizing Maps [#18819]
Ibtissam Brahmi, Guenael Cabanes, Younes Bennani and Basarab Matei
LIPN UMR CNRS 7030, University Sorbonne Paris Cite, France

P130 Eigenspectrum Shape Based Nystrom Sampling [#18255]
Djallel Bouneffouf
IBM, United States

P131 EEG Pattern Recognition using Brain-Inspired Spiking Neural Networks for Modelling Human Decision Processes [#18595]
Zohreh Gholami Doborjeh, Maryam Gholami Doborjeh and Nikola Kasabov
Auckland University of Technology, New Zealand; Auckland University of Technolog, New Zealand

P132 Practical Nonlinear Model Predictive Control Using an Echo State Network Model [#18661]
Bernardo B. Schwedersky, Rodolfo C. C. Flesch, Hiago A. S. Dangui and Lucas A. Iervolino
Universidade Federal de Santa Catarina, Brazil

P133 Localization of Mobile Robots with Topological Maps and Classification with Reject Option using Convolutional Neural Networks in Omnidirectional Images [#18759]
Suane Pires P. Silva, Raul Victor M. Nobrega, Aldisio G. Medeiros, Leandro B. Marinho, Jefferson S. Almeida and Pedro Pedrosa Reboucas Filho
PPGCC-IFCE, Brazil

P134 Voice Disorder Classification Using MLP and Wavelet Packet Transform [#18367]
Andrieli Barizao, Murillo Fermino, Maria Dajer, Luisa Liboni and Danilo Spatti
Department of Electrical and Computer Engineering University of Sao Paulo, Brazil; Department of Electrical Engineering Federal University of Technology Parana, Brazil; Department of Electrical and Computer Engineering Federal Institute of Education, Science, and Technology of Sao Paulo, Brazil; Department of Computer Systems University of Sao Paulo, Brazil

P135 Classification of Hand Movements from EMG Signals using Optimized MLP [#18382]
Aron Lima, Rafael Araujo, Fabio Santos, Victor Yoshizumi, Fabio Barros, Danilo Spatti, Luisa Liboni and Maria Dajer
Federal University of Technology Parana, Brazil; University of Sao Paulo, Brazil; Federal Institute of Education, Science, and Technology of Sao Paulo, Brazil

P136 Quantum Perceptron with Dynamic Internal Memory [#28035]
Fernando M de Paula Neto, Teresa B Ludermir, Wilson R de Oliveira and Adenilton J da Silva
Universidade Federal de Pernambuco, Brazil; Universidade Federal Rural de Pernambuco, Brazil

P137 Merging and Evolution: Improving Convolutional Neural Networks for Mobile Applications [#18629]
Zheng Qin, Zhaoning Zhang, Shiqing Zhang, Hao Yu, Jincai Li and Yuxing Peng
National University of Defense Technology, China

P138 Residential Energy Management with Deep Reinforcement Learning [#18520]
Zhiqiang Wan, Hepeng Li and Haibo He
University of Rhode Island, United States

P139 EDOS: Entropy Difference-based Oversampling Approach for Imbalanced Learning [#18524]
Lusi Li, Haibo He, Jie Li and Weijun Li
University of Rhode Island, United States; Shenzhen Dapu Microelectronic Co., Ltd., China

P140 Q-Learning for Non-Cooperative Channel Access Game of Cognitive Radio Networks [#18526]
He Jiang, Haibo He, Lingjia Liu and Yang Yi

University of Rhode Island, United States; Virginia Tech, United States

P141 Deep CNN-based Visual Target Tracking System Relying on Monocular Image Sensing [#18274]
Yawen Cui, Bo Zhang, Wenjing Yang, Xiaodong Yi and Yuhua Tang
National University of Defense Technology, China

Session 2p: Feature selection, extraction, and aggregation
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 4, Chair: Ricardo Cerri and Vincent Vigneron

4:30PM Multi-label Feature Selection Techniques for Hierarchical Multi-label Protein Function Prediction [#18286]
Ricardo Cerri, Rafael Mantovani, Marcio Basgalupp and Andre Carvalho
Federal University of Sao Carlos, Brazil; University of Sao Paulo, Brazil; Federal University of Sao Paulo, Brazil

4:50PM A novel statistical based feature extraction approach for the inner-class feature estimation using linear regression [#18549]
Fannia Pacheco
UNIV PAU AND PAYS ADOUR, LIUPPA, France

5:10PM Anomaly User Detection via Comprehensive Keystroke Features Optimization [#18608]
Meng Li, Bin Wu and Zhengcai Qin
State Key Laboratory of Information Security, Institute of Information Engineering, Chinese Academy of Sciences, China

5:30PM AutoModeling: Integrated Approach for Automated Model Generation by Ensemble Selection of Feature Subset and Classifier [#18664]
Arijit Ukil, Ishan Sahu, Chetanya Puri, Ayan Mukherjee, Rituraj Singh, Soma Bandyopadhyay and Arpan Pal
Tata Consultancy Services, India

5:50PM A Method Based on Convex Cone Model for Image-Set Classification with CNN Features [#19041]
Naoya Sogi, Taku Nakayama and Kazuhiro Fukui
University of Tsukuba, Japan

6:10PM Rank-order principal components. A separation algorithm for ordinal data exploration [#19114]
Vincent Vigneron and Leonardo Tomazeli Duarte
universite d'Evry, Universite Paris-Saclay, France; UNICAMP, Brazil

Session 1l-2: Deep neural networks
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 5, Chair: Suresh Kirthi Kumaraswamy and Bruno Fernandes

4:30PM Multi-source Subnetwork-level Transfer in CNNs Using Filter-Trees [#18449]
Suresh Kirthi Kumaraswamy, Pidaparthy Subbayya Sastry and Ramakrishnan Kalpathi R
Indian Institute of Science, India

4:50PM Deep Network based Automatic Annotation for Warehouse Automation [#18717]
Chandan Kumar Singh, Anima Majumder, Swagat Kumar and Laxmidhar Behera
Tata consultancy services (TCS), India; Indian Institute of Technology Kanpur, India

5:10PM Deep CNNs with Rotational Filters for Rotation Invariant Character Recognition [#18848]
Erik Barrow, Mark Eastwood and Chrisina Jayne
Coventry University, United Kingdom; Oxford Brookes, United Kingdom

5:30PM Non-negative Structured Pyramidal Neural Network for Pattern Recognition [#18993]
Milla Ferro, Bruno Fernandes and Carmelo Bastos-Filho

University of Pernambuco - UPE, Brazil

5:50PM Automatic Guidewire Tip Segmentation in 2D X-ray Fluoroscopy Using Convolution Neural Networks [#18328]
Yu-Dong Wu, Xiao-Liang Xie, Gui-Bin Bian, Zeng-Guang Hou, Xiao-Ran Cheng, Sheng Chen, Shi-Qi Liu and Qiao-Li Wang
State Key Laboratory of Management and Control for Complex Systems, Institute of Automation,Chinese Academy of Sciences, Beijing 100190, China, China

6:10PM Convolutional Neural Networks applied in the monitoring of metallic parts [#18767]
Julio Almeida, Jorge Amaral, Marco Silva and Luis Lopes
PEL-LARISA-UERJ, Brazil; DETEL-UERJ, Brazil

Session 1b-1: Recurrent neural networks
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 6, Chair: Marta Fernandes and Andros Tjandra

4:30PM Short-term prediction in an Oscillating Water Column using Artificial Neural Networks [#19012]
Marta Fernandes, Susana Vieira, Henriques Joao, Valerio Duarte and Gato Luis
IDMEC, Instituto Superior Tecnico, Portugal

4:50PM Robust Human Action Recognition Using Global Spatial-Temporal Attention for Human Skeleton Data [#18695]
Yun Han, Sheng-Luen Chung, ArulMurugan Ambikapathi, Jui-Shan Chan, Wei-You Lin and Shun-Feng Su
Neijiang Normal University, China; National Taiwan University of Science and Technology, Taiwan; UTECHZONE, India

5:10PM Quasi-Linear Recurrent Neural Network based Identification and Predictive Control [#18588]
Dazi Li, Tianjiao Kang, Jinglu Hu, Min Han and Qibing Jin
Beijing University of Chemical Technology, China; Waseda University, Japan; Dalian University, China

5:30PM Hierarchical Tree Long Short-Term Memory for Sentence Representations [#18733]
Xiuying Wang, Changliang Li and Bo Xu
Institute of Automation, Chinese Academy of Sciences, China

5:50PM Effective Quantization Approaches for Recurrent Neural Networks [#19103]
Md Zahangir Alom, Adam T Moody, Naoya Maruyama, Brian C Van Essen and Tarek M. Taha
Department of Electrical and Computer Engineering, University of Dayton, OH 45469, USA., United States; Center for Applied Scientific Computing, Lawrence Livermore National Laboratory, CA 94550, USA., United States

6:10PM Tensor Decomposition for Compressing Recurrent Neural Network [#19138]
Andros Tjandra, Sakriani Sakti and Satoshi Nakamura
Nara Institute of Science and Technology, Japan

Session Best-Stu: Students Best Papers
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 7, Chair: George Cavalcanti, Manuel Roveri and Zeng-Guang Hou

4:30PM DeepSign: Deep Learning based Traffic Sign Recognition [#18411]
Dong Li, Dongbin Zhao, Yaran Chen and Qichao Zhang
Institute of Automation, Chinese Academy of Sciences, China

4:50PM A Framework of Transferring Structures Across Large-scale Information Networks [#18429]
Shan Xue, Jie Lu, Guangquan Zhang and Li Xiong

University of Technology Sydney, Australia; Shanghai University, China

5:10PM An ANFIS Based System Identification Procedure for Modeling Electrochemical Cells [#18324]
Massimiliano Luzi, Maurizio Paschero, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

5:30PM EmotioNet: A 3-D Convolutional Neural Network for EEG-based Emotion Recognition [#18635]
Yi Wang, Zhiyi Huang, Brendan McCane and Phoebe Neo
University of Otago, New Zealand

5:50PM CARLsim 4: An Open Source Library for Large Scale, Biologically Detailed Spiking Neural Network Simulation using Heterogeneous Clusters [#18863]
Ting-Shuo Chou, Hirak Kashyap, Jinwei Xing, Stanislav Listopad, Emily Rounds, Michael Beyeler, Nikil Dutt and Jeffrey Krichmar
University of California, Irvine, United States; University of Washington, Seattle, United States

Session SS33: Neural Intelligence After Tomorrow
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 8, Chair: Ivan Tyukin, Danil Prokhorov, and Alexander N. Gorban

4:30PM Deep Stochastic Configuration Networks with Universal Approximation Property [#18248]
Dianhui Wang and Ming Li
La Trobe University, Australia

4:50PM Data analysis with arbitrary error measures approximated by piece-wise quadratic PQSQ functions [#18525]
Alexander N Gorban, Evgeny M Mirkes and Andrei Zinovyev
University of Leicester, United Kingdom; Institut Curie, France

5:10PM Cognitive Neural Network Driving DoF-Scalable Limbs in Time-Evolving Situations [#18786]
Carlos Calvo Tapia, Jose Antonio Villacorta-Atienza, Innokentiy Kastalskiy, Sergio Diez-Hermano, Abel Sanchez Jimenez and Valeri A. Makarov
Universidad Complutense de Madrid, Spain; Lobachevsky State University, Russia

5:30PM Efficiency of Shallow Cascades for Improving Deep Learning AI Systems [#18433]
Ivan Y. Tyukin, Alexander N. Gorban, Danil Prokhorov and Stephen Green
University of Leicester, Lobachevsky University, St-Petersburg State Electrotechnical University, United Kingdom; University of Leicster and Lobachevsky University, United Kingdom; Toyota Research Institute, United States; University of Leicester, United Kingdom

Session 1c-1: Self-organizing maps
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 9, Chair: Luiza Mici and Richard Hankins

4:30PM Recognition and Prediction of Human-Object Interactions with a Self-Organizing Architecture [#18187]
Luiza Mici, German I. Parisi and Stefan Wermter
Knowledge Technology, Department of Informatics,University of Hamburg, Germany

4:50PM Self-Organizing Maps with Variable Input Length for Motif Discovery and Word Segmentation [#19088]
Raphael Brito and Hansenclever Bassani
Universidade Federal de Pernambuco, Brazil

5:10PM Cascaded SOM: An Improved Technique for Automatic Email Classification [#18218]

Naveen Saini, Sriparna Saha and Pushpak Bhattacharyya
Indian Institute of Technology Patna, India

5:30PM SOMNet: Unsupervised Feature Learning Networks for Image Classification [#18787]
Richard Hankins, Yao Peng and Hujun Yin
University of Manchester, United Kingdom

5:50PM A Semi-Supervised Self-Organizing Map for Clustering and Classification [#19062]
Pedro Braga and Hansenclever Bassani
Universidade Federal de Pernambuco, Brazil

6:10PM The impact of Interconnecting Topologies on SOM Neural Networks [#18810]
Mayra Pimenta, Cesar Henrique Comin, Francisco Aparecido Rodrigues and Luciano Costa
University of Sao Paulo, Brazil

Session 1-1: Neural Networks Models
Monday, July 9, 4:30PM-6:30PM, Room: Oceania 10, Chair: Matheus Moura and Nitish Patel

4:30PM A Gradient Boosting-Based Ensemble Scheme for Extreme Learning Machine [#18186]
Wei Ao, Yulin He, Joshua Zhexue Huang and Jing Zhang
Shenzhen University, China

4:50PM SQNL: A New Computationally Efficient Activation Function [#18898]
Adedamola Wuraola and Nitish Patel
The University of Auckland, New Zealand

5:10PM Outdoor-to-Indoor Power Prediction for 768 MHz Wireless Mobile Transmission using Multilayer Perceptron [#18052]
Matheus Moura, Daniel Vidal, Carla Schueler, Leni Matos and Tadeu Ferreira
UFF, Brazil; UFRJ, Brazil

5:30PM Neural Network based Distributed Adaptive Time-varying Formation Control for Multi-UAV Systems with Varying Time Delays [#18746]
Tianyi Xiong, Zhiqiang Pu and Jianqiang Yi
School of Artificial Intelligence, University of Chinese Academy of Sciences; Institute of Automation, Chinese Academy of Sciences, China

5:50PM Global Dynamics and Local Synchrony: Therapeutic Prospects for Implant Learning Devices [#18459]
Denis Larrivee
Loyola University Chicago, United States

6:10PM ARTMAP Fuzzy Neural Network IDS Evaluation applied for real IEEE 802.11w data base [#18511]
Douglas Vilela, Carlos Santos Junior and Anna Lotufo
Universidade Estadual Paulista - Unesp, Brazil; Instituto Federal de Educacao Ciencia e Tecnologia do Estado de Sao Paulo - IFSP, Brazil

Session 1l-3: Deep neural networks
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 4, Chair: Farzan Majdani and Edward Collier

8:00AM Generic Application of Deep Learning Framework for Real-Time Engineering Data Analysis [#18801]
Farzan Majdani, Andrei Petrovski and Sergei Petrovski
Robert Gordon University, United Kingdom; Samara State Technical University, Russian Federation

8:20AM Few-shot Classifier GAN [#18704]

Adamu Ali-Gombe, Eyad Elyan, Yann Savoye and Chrisina Jayne
Robert Gordon University Aberdeen, United Kingdom; Oxford Brookes University, United Kingdom

8:40AM Interpretable Deep Convolutional Neural Networks via Meta-learning [#18736]
Xuan Liu, Xiaoguang Wang and Stan Matwin
Dalhousie University, Canada; Alibaba Group, China

9:00AM SqueezeGAN: Image to Image Translation with Minimum Parameters [#18764]
Sachin Kelkar, Chetanya Rastogi, Sparsh Gupta and Gopinath Pillai
IIT Roorkee, India

9:20AM CactusNets: Layer Applicability as a Metric for Transfer Learning [#19036]
Edward Collier, Robert DiBiano and Supratik Mukhopadhyay
Louisiana State University, United States; Ailectric, United States

9:40AM Unsupervised Learning using Pretrained CNN and Associative Memory Bank [#19077]
Qun Liu and Supratik Mukhopadhyay
Louisiana State University, United States

Session 8k-2: Signal processing, image processing, and multi-media
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 5, Chair: Heitor S. Carvalho and Pamela Johnston

8:00AM Application of Extreme Learning Machines and Echo State Networks to Seismic Multiple Removal [#18241]
Heitor S. Carvalho, Farzin Shams, Rafael Ferrari and Levy Boccato
UNICAMP, Brazil

8:20AM Improving Super-Resolution Reconstruction with Regularized Extreme Learning Machine Networks [#18699]
Daniel Cosmo, Thais Nascimento, Evandro Salles and Patrick Ciarelli
Universidade Federal do Espirito Santo, Brazil

8:40AM Latent HyperNet: Exploring the Layers of Convolutional Neural Networks [#18800]
Artur Jordao, Ricardo Kloss and William Schwartz
Universidade Federal de Minas Gerais, Brazil

9:00AM Eye Detection Using Ensemble of Weak Classifiers Based on Correlation Filter [#18971]
Wesley Lobato Passos, Gabriel M. Araujo, Amaro A. Lima, Felipe M. L. Ribeiro and Eduardo A. B. da Silva
PEE/Coppe/UFRJ, Brazil; CEFET/RJ, Brazil

9:20AM Extended LBP based Facial Expression Recognition System for Adaptive AI Agent Behaviour [#18914]
Kamlesh Mistry, Jyoti Jasekar, Biju Issac and Li Zhang
Northumbria University, United Kingdom; Northumbria Healthcare NHS, United Kingdom; Teesside University, United Kingdom

9:40AM Spatial Effects of Video Compression on Classification in Convolutional Neural Networks [#18281]
Pamela Johnston, Eyad Elyan and Chrisina Jayne
Robert Gordon University, United Kingdom; Oxford Brookes University, United Kingdom

Session SS11-31: Special Session on Cognition & Development and Neural Models for Behavior Recognition
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 6, Chair: Nikolas J. Hemion and Pablo Barros

8:00AM End-to-End Visuomotor Learning of Drawing Sequences using Recurrent Neural Networks

[#18306]
Kazuma Sasaki and Tetsuya Ogata
Graduate School of Fundamental Science and Engineering, Waseda University, Japan

8:20AM AFA-PredNet: The action modulation within predictive coding [#18340]
Junpei Zhong, Angelo Cangelosi, Xinzheng Zhang and Tetsuya Ogata
National Institute of Advanced Industry Science and Technology, Japan; Plymouth University, United Kingdom; Jinan University, China; Waseda University, Japan

8:40AM Long-Short Term Memory Networks for Modelling Embodied Mathematical Cognition in Robots [#18897]
Alessandro Di Nuovo
SHEFFIELD HALLAM UNIVERSITY, Great Britain

9:00AM Learning Empathy-Driven Emotion Expressions using Affective Modulations [#18181]
Nikhil Churamani, Pablo Barros, Erik Strahl and Stefan Wermter
University of Hamburg, Germany

9:20AM The OMG-Emotion Behavior Dataset [#18708]
Pablo Barros, Nikhil Churamani, Egor Lakomkin, Henrique Siqueira, Alexander Sutherland and Stefan Wermter
University of Hamburg, Germany

9:40AM Training Deep Neural Networks with Different Datasets In-the-wild: The Emotion Recognition Paradigm [#18854]
Dimitrios Kollias and Stefanos Zafeiriou
Imperial College London, United Kingdom

Session 8d: Biomedical engineering
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 7, Chair: Yang Liu and Monika Sharma

8:00AM Spiking-Neural-Network Based Fugl-Meyer Hand Gesture Recognition For Wearable Hand Rehabilitation Robot [#18163]
Yang Liu and Long Cheng
Institute of Automation, Chinese Academy of Sciences, China

8:20AM Representation of Deep Features using Radiologist defined Semantic Features [#18290]
Rahul Paul, Ying Liu, Qian Li, Lawrence Hall, Dmitry Goldgof, Yoganand Balagurunathan, Matthew Schabath and Robert Gillies
University of South Florida, Tampa, United States; Tianjin's Clinical Research Center for Cancer, Tianjin, China; H. L. Moffitt Cancer Center and Research Institute, Tampa, Florida, United States

8:40AM Inverse optimal control using a neural multi-step predictor for T1DM treatment [#18386]
Yennifer Rios, Julio Garcia, Oscar Sanchez, Edgar Sanchez, Alma Alanis, Eduardo Ruiz and Nancy Arana
Cinvestav, Mexico; CUCEI Universidad de Guadalajara, Mexico

9:00AM The Effects of Image Pre- and Post-Processing, Wavelet Decomposition, and Local Binary Patterns on U-Nets for Skin Lesion Segmentation [#18478]
Sara Ross-Howe and Hamid Tizhoosh
University of Waterloo, Canada

9:20AM Subject-Specific Convolutional Neural Networks for Accelerated Magnetic Resonance Imaging [#18501]
Mehmet Akcakaya, Steen Moeller, Sebastian Weingaertner and Kamil Ugurbil
University of Minnesota, United States

9:40AM Automatic Chromosome Classification using Deep Attention Based Sequence Learning of

Chromosome Bands [#18620]
Monika Sharma, Swati Swati and Lovekesh Vig
TCS Research Delhi, India

Session SS6: Feature Extraction and Learning on Image and Text Data
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 8, Chair: Domingo Mery, Jefersson Alex dos Santos, Nabin Sharma and Mukesh Prasad

8:00AM A Two-Stage Feature Selection Algorithm Based on Redundancy and Relevance [#18648]
Arren Matthew Antioquia and Arnulfo Azcarraga
De La Salle University, Philippines

8:20AM Evaluation of Convolutional Neural Network Architectures for Chart Image Classification [#18712]
Paulo Chagas, Rafael Akiyama, Aruanda Meiguins, Carlos Santos, Filipe Saraiva, Bianchi Meiguins and Jefferson Morais
Universidade Federal do Para, Brazil

8:40AM Person Head Detection in Multiple Scales Using Deep Convolutional Neural Networks [#18665]
Muhammad Saqib, Sultan Daud Khan, Nabin Sharma and Michael Blumenstein
University of Technology Sydney, Australia; University of Hail, Saudi Arabia

9:00AM Assessing fish abundance from underwater video using deep neural networks [#18640]
Ranju Mandal, Rod M. Connolly, Thomas A. Schlacher and Bela Stantic
Griffith University, Australia; University of the Sunshine Coast, Australia

Session SS27: Extreme Learning Machines
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 9, Chair: Guang-Bin Huang, Bao-Liang Lu, Jonathan Wu, Donald C. Wunsch II

8:00AM Evolutionary Multi-objective Ensemble Learning for Multivariate Electricity Consumption Prediction [#19018]
Hui Song, A. K. Qin and Flora D. Salim
RMIT University, Australia; Swinburne University of Technology, Australia

8:20AM An approach to improve online sequential extreme learning machines using restricted Boltzmann machines [#18143]
Andre Pacheco and Renato Krohling
Federal University of Espirito Santo, Brazil

8:40AM Semi-Supervised Online Elastic Extreme Learning Machine for Data Classification [#18257]
Carlos Silva and Renato Krohling
Federal University of Espirito Santo, Brazil

9:00AM Emergent Turing Machine as a General Purpose Approximator [#18598]
Zejia Zheng, Xiang Wu and Juyang Weng
Michigan State University, United States; Nanjing University of Science and Technology, United States

9:20AM Customer Life Time Value Model Framework using Gradient Boost Trees with RANSAC Response Regularization [#18671]
Lavneet Singh, Nancy Kaur and Girija Chetty
University of Canberra, Australia; GGSIP University, India

9:40AM Octree-based Convolutional Autoencoder Extreme Learning Machine for 3D Shape Classification [#19050]

Jichao Chen, Yijie Zeng, Siqi Wang, Ling Min Soh and Guang-Bin Huang
Nanyang Technological University, Singapore; National University of Defense Technology, China; Singapore Technologies Dynamics, Singapore

Session SS3: Special Session on Complex-Valued and Quaternionic Neural Networks
Tuesday, July 10, 8:00AM-10:00AM, Room: Oceania 10, Chair: Marcos Eduardo Valle, Igor Aizenberg, Akira Hirose, and Danilo Mandic

8:00AM Quaternionic Recurrent Correlation Neural Networks [#18236]
Marcos Eduardo Valle
Universidade Estadual de Campinas, Brazil

8:20AM Image Recognition using MLMVN and Frequency Domain Features [#18261]
Igor Aizenberg and Alexander Gonzalez
Manhattan College, United States

8:40AM Performance of entire-spectrum-processing complex-valued neural-network filter to generate digital elevation model in interferometric radar [#18156]
Kohei Oyama and Akira Hirose
The University of Tokyo, Japan

9:00AM Deep Quaternion Networks [#18246]
Chase Gaudet and Anthony Maida
University of Louisiana at Lafayette, United States

9:20AM iBQPSO: an Improved BQPSO Algorithm for Feature Selection [#18681]
Qing Wu, Yuanfeng Shen, Zheping Ma, Jin Fan and Ruiquan Ge
Hangzhou Dianzi University, China

9:40AM A comparison between ANN and SVM classifiers for Parkinson's disease by using a model-free computer-assisted handwriting analysis based on biometric signals [#18943]
Claudio Loconsole, Giacomo Donato Cascarano, Antonio Lattarulo, Antonio Brunetti, Gianpaolo Francesco Trotta, Domenico Buongiorno, Ilaria Bortone, Irio De Feudis, Giacomo Losavio, Vitoantonio Bevilacqua and Eugenio Di Sciascio
Department of Electrical and Information Engineering (DEI), Polytechnic University of Bari, Italy; Department of Mechanics, Mathematics and Management (DMMM), Polytechnic University of Bari, Italy; Institute of Clinical Physiology (IFC),National Council of Research (CNR), Italy; Medica Sud s.r.l., Italy

Plenary Talk PL2: Information Theory of Deep Learning, Naftali Tishby
Tuesday, July 10, 1:00PM-2:00PM, Room: ASIA 1, Chair: George Cavalcanti

Session 1l-4: Deep neural networks
Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 4, Chair: Juarez Monteiro and Jaime Davila

2:10PM Lateral Representation Learning in Convolutional Neural Networks [#18857]
Pedro Ballester, Ulisses Correa and Ricardo Araujo
Federal University of Pelotas, Brazil

2:30PM Evaluating the Feasibility of Deep Learning for Action Recognition in Small Datasets [#18873]
Juarez Monteiro, Roger Granada, Joao Aires and Rodrigo Barros
PUCRS, Brazil

2:50PM Multi-granularity Hierarchical Attention Siamese Network for Visual Tracking [#18109]
Xing Chen, Xiang Zhang, Huibin Tan, Long Lan, Zhigang Luo and Huang Xuhui
College of Computer, National University of Defense Technology, China

3:10PM Semantic Image Segmentation Based on Attentions to Intra Scales and Inner Channels [#18644]
Hongchao Lu, Zhidong Deng and Xiaolong Liu
Tsinghua University, China

3:30PM Enhanced Rotational Invariant Convolutional Neural Network for Supernovae Detection [#28042]
Esteban Reyes, Pablo Estevez, Ignacio Reyes, Guillermo Cabrera-Vives, Pablo Huijse, Rodrigo Carrasco and Francisco Forster
Dept Electrical Engineering, University of Chile, Chile; Dept Computer Science, University of Concepcion, Chile, Chile; CMM, University of Chile, Chile

3:50PM From Orthography to Semantics: a Study of Morphological Processing through Deep Learning Neural Networks [#18828]
Jaime Davila and Joanna Morris
Hampshire College, United States

Session 1h-2: Spiking neural networks
Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 5, Chair: Pablo J. Quero and Moraitis Timoleon

2:10PM Spiking neural networks enable two-dimensional neurons and unsupervised multi-timescale learning [#18911]
Moraitis Timoleon, Sebastian Abu and Eleftheriou Evangelos
IBM Research - Zurich, Switzerland

2:30PM Training Spiking ConvNets by STDP and Gradient Descent [#18370]
Amirhossein Tavanaei, Zachary Kirby and Anthony Maida
University of Louisiana at Lafayette, United States

2:50PM Bio-inspired Ganglion Cell Models for Detecting Horizontal and Vertical movements [#18953]
Pedro Machado, Andreas Oikonomou, Georgina Gosma and Martin McGinnity
Nottingham Trent University, United Kingdom

3:10PM Stochastic Neural Interface with Selective Synapse [#18089]
Jose M. Quero and Pablo J. Quero
Universidad de Sevilla, Spain

3:30PM A Timescale Invariant STDP-Based Spiking Deep Network for Unsupervised Online Feature Extraction from Event-Based Sensor Data [#18273]
Johannes Thiele, Olivier Bichler and Antoine Dupret
CEA/LIST, France

3:50PM Mastering the Output Frequency in Spiking Neural Networks [#18814]
Pierre Falez, Pierre Tirilly, Marius Bilasco, Philippe Devienne and Pierre Boulet
Univ. Lille, CNRS, Centrale Lille, France; Univ. Lille, CNRS, Centrale Lille, IMT Lille Douai, France

Session 6c-2: Neuromorphic hardware
Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 6, Chair: Tinish Bhattacharya and Carolina Zambelli

2:10PM MASTISK: Simulation Framework for Design Exploration of Neuromorphic Hardware [#18484]
Tinish Bhattacharya, Vivek Parmar and Manan Suri
Indian Institute of Technology Delhi, India

2:30PM Deep Versus Wide Convolutional Neural Networks for Object Recognition on Neuromorphic System [#19008]
Md Zahangir Alom, Theodore Josue, Md Nayim Rahman, Will Mitchell, Chris Yakopcic and

Tarek M. Taha

Department of Electrical and Computer Engineering, University of Dayton, Dayton, OH 45469, USA., United States

2:50PM Half-precision Floating Point on Spiking Neural Networks Simulations in FPGA [#18443]

Carolina Zambelli and Joao Ranhel

Universidade Federal do ABC, Brazil

3:10PM Confronting machine-learning with neuroscience for neuromorphic architectures design [#18141]

Lyes Khacef, Nassim Abderrahmane and Benoit Miramond

University Cote d'Azur / LEAT / UMR CNRS 7248, France

3:30PM Efficient Low-Power Material Analysis using Neuromorphic Hardware: A spectral case study [#18282]

Narayani Bhatia and Manan Suri

Department of Electrical Engineering, Indian Institute of Technology, Delhi, India

3:50PM Event-based Row-by-Row Multi-convolution engine for Dynamic-Vision Feature Extraction on FPGA [#18493]

Ricardo Tapiador-Morales, Antonio Rios-Navarro, Juan P. Dominguez-Morales, Daniel Gutierrez-Galan, Manuel Dominguez-Morales, Angel Jimenez Fernandez and Alejandro Linares Barranco

Seville, Spain

Session 1n-1: Other topics in artificial neural networks

Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 7, Chair: Valery Covachev and Kakemoto Yoshitsugu

2:10PM Existence of Periodic Solutions for the Discrete-Time Counterpart of a Complex-Valued Hopfield Neural Network with Time-Varying Delays and Impulses [#18086]

Valery Covachev and Zlatinka Covacheva

Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Bulgaria; Middle East College, Muscat, Oman

2:30PM Generate Novel Image Styles using Weighted Hybrid Generative Adversarial Nets [#18623]

Ming Li, Rui Xi and Mengshu Hou

University of Electronic Science and Technology of China, China

2:50PM Text-to-Text Generative Adversarial Networks [#18728]

Li Changliang, Su Yixin and Liu Wenjun

Institute of Automation, Chinese Academy of Sciences, China; Melbourne University, Australia

3:10PM A Neural Net Framework for Accumulative Feature-based Matrix Completion [#19059]

Mehmet Aktukmak, Samuel Mercier and Ismail Uysal

University of South Florida, United States

3:30PM Shepard Interpolation Neural Networks with K-Means: A Shallow Learning Method for Time Series Classification [#18795]

Kaleb E. Smith, Phillip Williams, Kaylen J. Bryan, Mitchell Solomon, Max Ble and Rana Haber

Florida Institute of Technology, United States; University of Ottawa, Canada

3:50PM Analysis of inner structure of VSF-Network [#18678]

Kakemoto Yoshitsugu and Nakasuka Shinichi

JSOL Corp., Japan; The University of Tokyo, Japan

Session SS7: Advances in Reservoir Computing

Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 8, Chair: Claudio Gallicchio, Alessio Micheli,

Simone Scardapane and Peter Tiňo

2:10PM Spying on chaos-based cryptosystems with reservoir computing [#18481]
Piotr Antonik, Marvyn Gulina, Jael Pauwels, Damien Rontani, Marc Haelterman and Serge Massar
Centrale Supelec - Universite Paris-Saclay, France; Universite de Namur, Belgium; Universite libre de Bruxelles, Belgium

2:30PM A Simple Reservoir Model of Working Memory with Real Values [#18912]
Anthony Strock, P. Nicolas Rougier and Xavier Hinaut
LaBRI, Inria, IMN, France; Inria, LaBRI, IMN, France

2:50PM Transferring State Representations in Hierarchical Spiking Neural Networks [#18948]
Barna Zajzon, Renato Duarte and Abigail Morrison
Juelich Research Center and RWTH Aachen University, Germany; Juelich Research Center, Germany; Juelich Research Center and Ruhr-University Bochum, Germany

3:10PM Optoelectronic Reservoir Computing with VCSEL [#19019]
Jean Benoit Heroux, Hidetoshi Numata, Naoki Kanazawa and Daiju Nakano
IBM Research - Tokyo, Japan

3:30PM Why Layering in Recurrent Neural Networks? A DeepESN Survey [#18884]
Claudio Gallicchio and Alessio Micheli
Department of Computer Science, University of Pisa, Italy

3:50PM Concentric ESN: Assessing the Effect of Modularity in Cycle Reservoirs [#18471]
Davide Bacciu and Andrea Bongiorno
Universita di Pisa, Italy

4:10PM Fault Detection in Steel-Reinforced Concrete Using Echo State Networks [#18091]
Adam Wootton, Charles Day and Peter Haycock
Keele University, United Kingdom

Session 2k-2: Mixture models, ensemble learning, and other meta-learning or committee algorithms
Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 9, Chair: Ricardo Prudencio and Fernando Von Zuben

2:10PM Transferring Knowledge From Texts to Images by Combining Deep Semantic Feature Descriptors [#19010]
Wanderley Miguel and Prudencio Ricardo
Centro de Informatica - Universidade Federal de Pernambuco, Brazil

2:30PM Investigating multiobjective methods in multitask classification [#18815]
Marcos M. Raimundo and Fernando J. Von Zuben
University of Campinas, Brazil

2:50PM Predicting Nodule Malignancy using a CNN Ensemble Approach [#18292]
Rahul Paul, Lawrence Hall, Dmitry Goldgof, Matthew Schabath and Robert Gillies
University of South Florida, Tampa, United States; H. L. Moffitt Cancer Center and Research Institute, Tampa, Florida, United States

3:10PM Selecting local ensembles for multi-class imbalanced data classification [#18792]
Bartosz Krawczyk, Alberto Cano and Michal Wozniak
Virginia Commonwealth University, United States; Wroclaw University of Science and Technology, Poland

3:30PM A Supervised Approach to Classify the Status of Bone Mineral Density in Post-Menopausal Women through Static and Dynamic Baropodometry [#18973]

Ilaria Bortone, Gianpaolo Francesco Trotta, Giacomo Donato Cascarano, Paola Regina, Antonio Brunetti, Irio De Feudis, Domenico Buongiorno, Claudio Loconsole and Vitoantonio Bevilacqua

Institute of Clinical Physiology (IFC), National Research Council (CNR), Pisa - Italy, Italy; Department of Mechanics, Mathematics and Management (DMMM), Polytechnic University of Bari, Bari - Italy, Italy; Department of Electrical and Information Engineering (DEI), Polytechnic University of Bari, Bari - Italy, Italy

3:50PM Multi-view Vehicle Detection based on Part Model with Active Learning [#18547]

Mukesh Prasad, Chih-Ling Liu, Dong-Lin Li, Chandan Jha and Chin-Teng Lin

University of Technology Sydney, Australia; National Chiao Tung University, Taiwan

Session 1b-2: Recurrent neural networks

Tuesday, July 10, 2:10PM-4:10PM, Room: Oceania 10, Chair: Ying Ma and Michael Traynor

2:10PM Comparison of Static Neural Network with External Memory and RNNs for Deterministic Context Free Language Learning [#28040]

Ying Ma and Jose Principe

University of Florida, United States

2:30PM Multimodal Emotion Recognition using Deep Continuous Conditional Recurrent Neural Fields [#19139]

Ntombikayise Banda and Andries Engelbrecht

University of Cambridge, United Kingdom; University of Pretoria, South Africa

2:50PM Learning Device Models with Recurrent Neural Networks [#18245]

John Clemens

Univ. of Maryland, Baltimore County (UMBC), United States

3:10PM Resset: A Recurrent Model for Sequence of Sets with Applications to Electronic Medical Records [#19017]

Phuoc Nguyen, Truyen Tran and Svetha Venkatesh

Deakin University, Australia

3:30PM Words Are Not Temporal Sequences of Characters [#18500]

Michael Traynor and Thomas Trappenberg

Dalhousie University, QRA Corp, Canada; Dalhousie University, Canada

3:50PM Automata Computation with Hodgkin-Huxley Based Neural Networks Composed of Synfire Rings [#18538]

Jeremie Cabessa and Aubin Tchaptchet

University Paris 2, France; Philipps University of Marburg, Germany

Plenary Poster Session POS2: Poster Session 2

Tuesday, July 10, 4:10PM-6:30PM, Room: Europa II , Chair: Leandro Minku and Rodrigo Soares

P301 Computing Vertex Centrality Measures in Massive Real Networks with a Neural Learning Model [#18214]

Felipe Grando and Luis C. Lamb

Federal University of Rio Grande do Sul, Brazil

P302 Combined Convolutional Neural Network for High Frequency Restoration in Acoustic Impedance Images [#18221]

Isaac Sacramento, Mauro Roisenberg, Rodrigo Exterkoetter, Leandro Figueiredo and Bruno Rodrigues

Federal University of Santa Catarina, Brazil; Petrobras, Brazil

P303 Learning Fluid Flows [#18230]

Theodoros Georgiou, Sebastian Schmitt, Markus Olhofer, Yu Liu, Thomas Baeck and Michael Lew

Leiden Institute of Advanced Computer Science, Netherlands; Honda Research Institute Europe GmbH, Germany

P304 An Optic-fiber Fence Intrusion Recognition System Using the Optimized Curve Fitting Model based on the SVM Method [#18239]

Ningyu He, Jie Zhu and Lianqiang Li

Department of Electronic Engineering Shanghai Jiao Tong University (SJTU), China

P305 TCSVM - A Cascade Approach with Transductive Inference to Predicting Protein Translation Initiation Site [#18242]

Wallison Guimaraes, Cristiano Pinto, Cristiane Nobre and Luis Zarate

Pontifical Catholic University of Minas Gerais, Brazil; School of Engineering of Minas Gerais, Brazil

P306 An FPGA-based SOM circuit architecture for online learning of 64-QAM data streams [#18244]

Miguel Angelo de Abreu Sousa, Ricardo Pires, Sara Dereste dos Santos Perseghini and Emilio Del-Moral-Hernandez

Federal Institute of Education, Science and Technology - IFSP, Brazil; University of Sao Paulo, Brazil

P307 A Deep Learning Health Data Analysis Approach: Automatic 3D Prostate MR Segmentation with Densely-Connected Volumetric ConvNets [#18247]

Qikui Zhu, Bo Du, Jia Wu and Pingkun Yan

Wuhan University, China; Macquarie University, Australia; Rensselaer Polytechnic Institute, United States

P308 Investigating the Impact of Diversity in Ensembles of Multi-label Classifiers [#18252]

Diego S. C. Nascimento, Anne M. P. Canuto, Danilo R. C. Bandeira and Daniel Araujo

Federal Institute of Education, Science and Technology of Rio Grande do Norte, Brazil; Federal University of Rio Grande do Norte, Brazil

P309 Incorporating Lexicons into LSTM for Sentiment Classification [#18253]

Yifei Lu, Yanghui Rao, Jun Yang and Jian Yin

Guangdong Key Laboratory of Big Data Analysis and Processing Sun Yat-sen University, China

P310 Extending MLP ANN hyper-parameters Optimization by using Genetic Algorithm [#18254]

Fernando Itano, Miguel Angelo Sousa and Emilio Del-Moral-Hernandez

Dept. Eletronic Systems Engineering - Univerity of Sao Paulo, Brazil; Federal Institute of Education, Science and Technology of Sao Paulo, Brazil

P311 Attention-Based BiLSTM Network with Lexical Feature for Emotion Classification [#18262]

Gao Kai, Xu Hua, Gao Chengliang, Hao Hanyong, Deng Junhui and Sun Xiaomin

Tsinghua University, China; State Grid Corporation of China, China

P312 Topic Discovery for Steaming Short Texts with CTM [#18263]

Xu Yunfeng, Xu Hua, Zhu Longxia, Hao Hanyong, Deng Junhui, Sun Xiaomin and Bai Xiaoli

Department of Computer Science and Technology, TSinghua University, China; State Grid Corporation of China, China; Shijiazhuang Preschool Teacher College, China

P313 Training Recurrent Neural Network on Distributed Representation Space for Session-based Recommendation [#18264]

Yue Gui and Zhi Xu

Beijing University of Posts and Telecommunications, China

P314 A Very Short-Term Online Forecasting Model for Photovoltaic Power based on Two-Stage Resource Allocation Network [#18270]

Chaofeng Lv, Tengfei Zhang, Fumin Ma and Dong Yue

Nanjing University of Posts and Telecommunications, China; Nanjing University of Finance and Economics, China

P315 Probabilistic Inference of the Packet Delivery Ratio in Industrial Wireless Sensor Networks [#18285]

Heitor Florencio and Adriao Doria Neto

Federal University of Rio Grande do Norte, Brazil

P316 Aggregation of Time Series Forecasts via Cacoullos Copula [#18291]

Ricardo Oliveira, Thaize Assis, Paulo Firmino, Tiago Ferreira and Adriano Oliveira

IFMS and UFPE, Brazil; UFRPE, Brazil; UFCA, Brazil; UFPE, Brazil

P317 TNRP:A Model of Predicting User Preference via Text-enhanced Network Representation [#18300]

Xing Chu, Linpeng Huang and Yanyan Shen

Shanghai Jiao Tong University, China

P318 A Deep Prediction Model of Traffic Flow Considering Precipitation Impact [#18309]

Jingyuan Wang, Fei Hu, Xiaofei Xu, Dengbao Wang and Li Li

School of Computer and Information Science, Southwest University, Chongqing, China, China

P319 Active Object Detection Using Double DQN and Prioritized Experience Replay [#18312]

Xiaoning Han, Huaping Liu, Fuchun Sun and Dongfang Yang

Shenyang Institute of Automation, Chinese Academy of Sciences, China; Department of Computer Science and Technology, Tsinghua University, China; Xi'an High Tech Research Institution, China

P320 Pattern Analysis in Drilling Reports using Optimum-Path Forest [#18318]

Gustavo Sousa, Daniel Pedronette, Alexandro Baldassin, Pedro Privatto, Matheus Gaseta, Ivan Guilherme, Danilo Colombo, Luis Afonso and Joao Papa

Sao Paulo State University - UNESP, Brazil; Cenpes/Petrobras, Brazil

P321 Catching Dynamic Heterogeneous User Data for Identity Linkage Learning [#18319]

Fan Lei, Qiudan Li, Song Sun, Lei Wang and Daniel Dajun Zeng

The State Key Laboratory of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Sciences, China

P322 A Target-Guided Neural Memory Model for Stance Detection in Twitter [#18349]

Penghui Wei, Wenji Mao and Daniel Zeng

Institute of Automation, Chinese Academy of Sciences, China

P323 Transfer Learning Based Model for Classification of Cocoa Pods [#18353]

Juliana Rodrigueiro C P de Oliveira and Roseli Ap. Francelin Romero

Institute of Mathematical and Computer Sciences, University of Sao Paulo, Brazil

P324 Interpretable Parallel Recurrent Neural Networks with Convolutional Attentions for Multi-Modality Activity Modeling [#18358]

Kaixuan Chen, Lina Yao, Xianzhi Wang, Dalin Zhang, Tao Gu, Zhiwen Yu and Zheng Yang

School of Computer Science and Engineering, UNSW Sydney, Australia; School of Information Technology, RMIT University, Australia; School of Computer Science, Northwestern Polytechnical University, China; School of Software, Tsinghua University, China

P325 Correlation Filter Tracking with Multiscale Spatial View [#18360]

Yafu Xiao, Jing Li, Jun Chang, Yifei Zhou and Wenfan Zhang

School of Computer Science, Wuhan University, China

P326 Gaussian Kernel Parameter Optimization in One-Class Support Vector Machines [#18391]

Ali Anaissi, Ali Braytee and Mohamad Naji

Faculty of Engineering and IT, The University of Sydney, Australia; Faculty of Engineering and IT, University of Technology Sydney, Australia

P327 Connectivity Based Method for Clustering Microbial Communities from Metagenomics Data of Water and Soil Samples [#18403]

Jessica Rahman, Jinyan Li, Juanying Xie, Shoshana Fogelman and Michael Blumenstein

The Australia National University, Australia; University of Technology Sydney, Australia; Shannxi Normal University, China

P328 Low-Consumption Neuromorphic Memristor Architecture Based on Convolutional Neural Networks [#18417]

Shengyang Sun, Jiwei Li, Zhiwei Li, Haijun Liu, Qingjiang Li and Hui Xu

National University of Defense Technology, China

P329 A Centerness Peak Based Clustering Algorithm [#18419]

Jian Hou and Aihua Zhang

Bohai University, China

P330 Curiosity-Driven Reinforcement Learning with Homeostatic Regulation [#18420]

Ildefons Magrans de Abril and Ryota Kanai

ARAYA, Inc., Japan

P331 An Empirical Study on Identifying Sentences with Salient Factual Statements [#18297]

Damian Jimenez and Chengkai Li

The University of Texas at Arlington, United States

P332 Cyclone Track Prediction with Matrix Neural Networks [#18591]

Yanfei Zhang, Rohitash Chandra and Junbin Gao

University of Sydney Business School, Australia; Centre for Translational Data Science, The University of Sydney, Australia

P333 A generalized financial time series forecasting model based on automatic feature engineering using genetic algorithms and support vector machine [#18560]

Norberto Ritzmann Junior and Julio Cesar Nievola

Pontificia Universidade Catolica do Parana, Brazil

P334 Improving the accuracy of intelligent forecasting models using the perturbation theory [#28032]

E. G. Silva, Domingos S. O. Santos Junior, George D. Cavalcanti and Paulo S. G. de Mattos Neto

CIn - UFPE, Brazil

P335 A New Modeling for Item Ratings Using Landmarks [#18536]

Gustavo Lima, Carlos Mello and Geraldo Zimbrao

PESC, COPPE, UFRJ, Brazil; PPGI, CCET, UNIRIO, Brazil

P336 Stroke Lesion Detection Using Convolutional Neural Networks [#18151]

Danillo Roberto Pereira, Pedro Pedrosa Reboucas Filho, Gustavo Henrique Rosa, Joao Paulo Papa and Victor Hugo Costa Albuquerque

Sao Paulo State University, Department of Computing, Bauru, SP, Brazil; Federal Institute of Education, Science and Technology of Ceara, CE, Brazil; Graduate Program in Applied Informatics, University of Fortaleza, Fortaleza, CE, Brazil

P337 A Multiple Source based Transfer Learning Framework for Marketing Campaigns [#18320]

James Brownlow, Charles Chu, Guandong Xu, Ben Culbert, Bin Fu and Qinxue Meng

Marketing, CFS, Australia; University of Technology Sydney, Australia

P338 Brazilian Soil Bulk Density Prediction Based on a Committe of Neural Regressors [#18395]

Diego B. Haddad, Laura S. Assis, Luis Tarrataca, Andrea S. Gomes, Marcos B. Ceddia, Rosane F. Oliveira, Jurair. R. de P. Junior and Diego N. Brandao

CEFET-RJ, Brazil; UFRRJ, Brazil

P339 Cross-domain Deep Learning Approach for Multiple Financial Market Prediction [#18387]

Xinxin Jiang, Shirui Pan, Jing Jiang and Guodong Long

Centre for Artificial Intelligence, University of Technology Sydney, Australia

P340 Flexible ranking extreme learning machine based on matrix-centering transformation [#18658]
Shizhao Chen, Kai Chen, Chuanfu Xu and Long Lan
National University of Defense Technology, China

P341 Active Learning for Input Space Exploration in Traffic Simulators [#18893]
Francisco Antunes, Bernardete Ribeiro and Francisco Pereira
CISUC, Dept. of Informatics Engineering, University of Coimbra, Portugal; Management Engineering, Technical University of Denmark, Denmark

Session 1l-5: Deep neural networks
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 4, Chair: Gianlucca Zuin and Kelwin Fernandes

4:30PM Paraphrase Recognition via Combination of Neural Classifier and Keywords [#18498]
Xiuying Wang, Changliang Li, Bo Xu and Zhijun Zheng
Institute of Automation, Chinese Academy of Sciences, China; Beijing Language and Culture University, China

4:50PM Learning Transferable Features for Open-Domain Question Answering [#18161]
Gianlucca Zuin, Luiz Chaimowicz and Adriano Veloso
Universidade Federal de Minas Gerais, Brazil

5:10PM Deep Learning Single Logo Recognition with Data Enhancement by Shape Context [#18706]
Yulong Wang, Wei Yang and Haoxin Zhang
State Key Laboratory of Networking and Switching Technology, Beijing University of Posts and Telecommunications, China

5:30PM Deep Image Segmentation by Quality Inference [#18714]
Kelwin Fernandes, Ricardo Cruz and Jaime Cardoso
INESC TEC, Portugal

5:50PM Deep Learning for Stock Market Prediction Using Technical Indicators and Financial News Articles [#18954]
Manuel Vargas, Carlos Anjos, Gustavo Bichara and Alexandre Evsukoff
Universidade Federal do Rio de Janeiro, Brazil

6:10PM A Bimodal Learning Approach to Assist Multi-sensory Effects Synchronization [#18676]
Raphael Abreu, Joel dos Santos and Eduardo Bezerra
CEFET/RJ, Brazil

Session 2g-h-l: Probabilistic methods and Gaussian processes
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 5, Chair: Anthony Rhodes and Nikesh Lama

4:30PM Gaussian Processes with Context-Supported Priors for Active Object Localization [#18007]
Anthony Rhodes, Jordan Witte, Melanie Mitchell and Bruno Jedynak
Portland State University, United States; Portland State University, Santa Fe Institute, United States

4:50PM Topic Modeling using Variational Auto-Encoders with Gumbel-Softmax and Logistic-Normal Mixture Distributions [#18843]
Denys Silveira, Marco Cristo, Marie-Francine Moens and Andre Luiz da Costa Carvalho
Universidade Federal do Amazonas, Brazil; Katholieke Universiteit te Leuven, Belgium

5:10PM Learning non-Gaussian Time Series using the Box-Cox Gaussian Process [#18791]
Rios Gonzalo and Tobar Felipe
Center for Mathematical Modeling and Department of Mathematical Engineering, Chile; Center for Mathematical Modeling, Chile

5:30PM Information State: A Representation for Dynamic Processes Using Information Theory

[#18335]
Amanda Oliveira, Allan Martins and Adriao Doria Neto
Universidade Federal do Semi Arido, Brazil; Universidade Federal do Rio Grande do Norte, Brazil

5:50PM Anomaly and Change Detection in Graph Streams through Constant-Curvature Manifold Embeddings [#18868]
Daniele Zambon, Lorenzo Livi and Cesare Alippi
Universita' della Svizzera italiana, Switzerland; University of Exeter, United Kingdom

6:10PM Spike Train Synchrony Analysis of Neuronal Cultures [#18771]
Nikesh Lama, Alan Hargreaves, Bob Stevens and Martin McGinnity
Nottingham Trent University, United Kingdom

Session 2b-1: Unsupervised learning and clustering
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 6, Chair: Leonardo Enzo Brito da Silva and Vincenzo Randazzo

4:30PM Multi-view Construction for Clustering Based on Feature set Partitioning [#18402]
Xiaojing Chang, Yan Yang and Hongjun Wang
Southwest Jiaotong University, China

4:50PM A Time-Sensitive Hybrid Learning Model for Patient Subgrouping [#18860]
Yingchun Zhang, Haoyi Zhou, Jianxin Li, Wanlu Sun and Yahong Chen
Beihang University, China; Peking University Third Hospital, China

5:10PM Priority-based Soft Vector Quantization Feature Maps [#18212]
Prayag Gowgi, Amrutha Machireddy and Shayan Srinivasa Garani
Indian Institute of Science, India

5:30PM Nonstationary topological learning with bridges and convex polytopes: the G-EXIN neural network [#18496]
Vincenzo Randazzo, Giansalvo Cirrincione, Gabriele Ciravegna and Eros Pasero
Politecnico di Torino, DET, Torino, Italy; University of South Pacific,USP, SEP, Suva, Fiji; Politecnico di Torino, DAIUN, Torino, Italy

5:50PM A study on exploiting VAT to mitigate ordering effects in Fuzzy ART [#19005]
Leonardo Enzo Brito da Silva and Donald C. Wunsch II
Missouri University of Science and Technology, United States

6:10PM Explore Uncertainty in Residual Networks for Crowds Flow Prediction [#18225]
Bin Wang, Zheng Yan, Jie Lu, Guangquan Zhang and Tianrui Li
Centre for Artificial Intelligence, FEIT, University of Technology Sydney, Australia; School of Information Science and Technology, Southwest Jiaotong University, China

Session 2a-1: Supervised learning
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 7, Chair: Daniel Alberto Pamplona and Huayue Cai

4:30PM Supervised Neural Network with multilevel input layers for predicting of air traffic delays [#18578]
Daniel Alberto Pamplona, Li Weigang, Alexandre Gomes Barros, Elcio Hideiti Shiguemori and Claudio Jorge Pinto Alves
Aeronautics Institute of Technology, Brazil; University of Brasilia, Brazil; University of Calgary, Canada; National Institute for Space Research, Brazil

4:50PM Targeting Optimization for Internet Advertising by Learning Logged Bandit Feedback [#18737]
Margherita Gasparini, Alessandro Nuara, Francesco Trovo, Nicola Gatti and Marcello Restelli

Politecnico di Milano, Italy

5:10PM Random Projection Neural Network Approximation [#18044]
Peter Andras
Keele University, United Kingdom

5:30PM Accelerated Block Coordinate Descent for Sparse Group Lasso [#18497]
Alejandro Catalina, Carlos M. Alaiz and Jose R. Dorronsoro
Universidad Autonoma de Madrid, Spain

5:50PM Box-constrained Discriminant Projective Non-negative Matrix Factorization through Augmented Lagrangian Multiplier Method [#18613]
Huayue Cai, Xiang Zhang, Zhigang Luo and Xuhui Huang
National University of Defense Technology, China

6:10PM CTF-PSF: Coupled Tensor Factorization with Partially Shared Factors [#18689]
Qing Wu, Xingfei Li, Quan Do, Jin Fan, Ruiquan Ge and Jie Wang
Hangzhou Dianzi University, China; University of Technology Sydney, Australia

Session SS4: Special Session on Deep Neural Audio Processing
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 8, Chair: Emanuele Principi, Aurelio Uncini, Bjorn Schuller, Stefano Squartini

4:30PM End-to-End Polyphonic Sound Event Detection Using Convolutional Recurrent Neural Networks with Learned Time-Frequency Representation Input [#18064]
Emre Cakir and Tuomas Virtanen
Tampere University of Technology, Finland

4:50PM Bag-of-Deep-Features: Noise-Robust Deep Feature Representations for Audio Analysis [#18203]
Shahin Amiriparian, Maurice Gerczuk, Sandra Ottl, Nicholas Cummins, Sergey Pugachevskiy and Bjoern Schuller
University of Augsburg, Germany

5:10PM Multichannel Sound Event Detection Using 3D Convolutional Neural Networks for Learning Inter-channel Features [#18276]
Sharath Adavanne, Archontis Politis and Tuomas Virtanen
Tampere University of Technology, Finland; Aalto University, Finland

5:30PM Stochastic Multiple Choice Learning for Acoustic Modeling [#18470]
Bin Liu, Shuai Nie, Shan Liang, Zhanlei Yang and Wenju Liu
Institute of Automation, Chinese Academy of Sciences, China

5:50PM MaD TwinNet: Masker-Denoiser Architecture with Twin Networks for Monaural Sound Source Separation [#18686]
Konstantinos Drossos, Stylianos Ioannis Mimilakis, Dmitriy Serdyuk, Gerald Schuller, Tuomas Virtanen and Yoshua Bengio
Audio Research Group, Lab. of Signal Processing, Tampere University of Technology, Finland; Fraunhofer IDMT - Technical University of Ilmenau, Germany; Montreal Institute for Learning Algorithms, University of Montreal, Canada

6:10PM Snore Sounds Excitation Localization by Using Scattering Transform and Deep Neural Networks [#18162]
Fabio Vesperini, Andrea Galli, Leonardo Gabrielli, Emanuele Principi and Stefano Squartini
Universita' Politecnica delle Marche, Italy

Session 1c-2: NEURAL NETWORK MODELS
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 9, Chair: Marcio Rubbo and William Severa

4:30PM Prototype Selection Using Self-Organizing-Maps and Entropy for Overlapped Classes and Imbalanced Data [#18298]
Marcio Rubbo and Leandro Silva
Mackenzie Presbyterian University, Brazil

4:50PM Real-Time Battery Bank Charge-Discharge Using Neural Sliding Mode Control [#18556]
Tania B. Lopez-Garcia, Riemann Ruiz-Cruz and Edgar N. Sanchez
CINVESTAV del IPN, Mexico; ITESO, Mexico

5:10PM A case for multiple and parallel RRAMs as synaptic model for training SNNs [#19051]
Aditya Shukla, Sidharth Prasad, Sandip Lashkare and Udayan Ganguly
Dept. of EE, IIT Bombay, India

5:30PM Spiking Neural Algorithms for Markov Process Random Walk [#18913]
William Severa, Rich Lehoucq, Ojas Parekh and Aimone James
Sandia National Laboratories, United States

5:50PM Is There a Purpose to Network Redundancy [#19032]
Melissa Johnson and Sylvain Chartier
Univeristy of Ottawa, Canada; University of Ottawa, Canada

6:10PM An Embedded Tracking System with Neural Network Accelerator [#19100]
Wei Yang, Wei Wang, Yang Gao and Zhanpeng Jin
Binghamton University, United States; University at Buffalo, United States

Session 2f-m: Online learning and Sparse coding
Tuesday, July 10, 4:30PM-6:30PM, Room: Oceania 10, Chair: Maciej Jaworski and Mahmood Azimi-Sadjadi

4:30PM Concept Drift Detection in Streams of Labelled Data Using the Restricted Boltzmann Machine [#19086]
Maciej Jaworski, Piotr Duda and Leszek Rutkowski
Czestochowa University of Technology, Poland

4:50PM Predicting concept drift in data streams using metadata clustering [#18603]
Robert Anderson, Yun Sing Koh and Gillian Dobbie
University of Auckland, New Zealand

5:10PM A Unified Framework of Random Feature KLMS Algorithms and Convergence Analysis [#18062]
Jiyao Dong, Yunfei Zheng and Badong Chen
School of Electronic and Information Engineering, Xi'an Jiaotong University, China

5:30PM Sparse least squares support vector regression for nonstationary systems [#18012]
Xia Hong, Hao Chen, Senlin Wang and Di Fatta Giuseppe
Department of Computer Science,University of Reading, United Kingdom; Quanzhou Institute of Equipment Manufacturing Haixi Institutes, Chinese Academy of Science, China

5:50PM Incremental Dictionary Learning With Sparsity [#18222]
Mahmood Azimi-Sadjadi, Yinghui Zhao and Sassan Sheedvash
Colorado State University, United States; Chinese Academy of Sciences, China; Ashford University, United States

6:10PM Sparse Autoencoders for Posture Recognition [#18752]
Doreen Jirak and Stefan Wermter
University of Hamburg, Germany

Session 2e-1: Deep learning

Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 4, Chair: Gunjan Gautam and Douglas M. Souza

8:00AM Contact Lens Detection using Transfer Learning with Deep Representations [#18516]
Gunjan Gautam and Susanta Mukhopadhyay
IIT(ISM) Dhanbad, India

8:20AM A Robust Real-Time Automatic License Plate Recognition Based on the YOLO Detector [#18922]
Rayson Laroca, Evair Severo, Luiz A. Zanlorensi, Luiz S. Oliveira, Gabriel R. Goncalves, William Robson Schwartz and David Menotti
Federal University of Parana (UFPR), Brazil; Federal University of Minas Gerais (UFMG), Brazil

8:40AM Fast Training and Model Compression of Gated RNNs via Singular Value Decomposition [#18055]
Rui Dai, Lefei Li and Wenjian Yu
Tsinghua University, China

9:00AM Copycat CNN: Stealing Knowledge by Persuading Confession with Random Non-Labeled Data [#18895]
Jacson Rodrigues Correia-Silva, Rodrigo F. Berriel, Claudine Badue, Alberto F. De Souza and Thiago Oliveira-Santos
UFES, Brazil

9:20AM A Compact Encoding for Efficient Character-level Deep Text Classification [#18348]
Wemerson Marinho, Luis Marti and Nayat Sanchez-Pi
Universidade Federal Fluminense, Brazil; Universidade do Estado do Rio de Janeiro, Brazil

9:40AM Towards High-Resolution Face Pose Synthesis [#18878]
Douglas M. Souza and Duncan D. Ruiz
Pontificia Universidade Catolica do Rio Grande do Sul, Brazil

Session 8k-3: Signal processing, image processing, and multi-media
Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 5, Chair: Everton Lacerda and Eucassio Lima

8:00AM Learning Environmental Sounds with Multi-scale Convolutional Neural Network [#18713]
Boqing Zhu, Changjian Wang, Feng Liu, Jin Lei, Zhen Huang, Yuxing Peng and Fei Li
Science and Technology on Parallel and Distributed Laboratory, National University of Defense Technology, China; Shen Zhen University, China

8:20AM A Pitch Extraction System Based on Laryngeal Mechanisms Classification [#19080]
Everton Lacerda and Carlos Mello
Universidade Federal de Pernambuco, Brazil

8:40AM Curved Gabor Projection Entropy for Face Recognition [#18389]
Eucassio Lima, Luis Vogado, Ricardo Rabelo and Cornelia Passarinho
Federal University of Piaui (UFPI), Brazil

9:00AM Fusion of Interest Point/Image based descriptors for efficient person re-identification [#18548]
Mohamed Ibn Khedher, Houda Jmila and Mounim A. El Yacoubi
Telecom SudParis, University of Paris-Saclay, France

9:20AM ELM-SOM: A Continuous Self-Organizing Map for Visualization [#18558]
Renjie Hu, Venous Roshdibenam, Hans Johnson, Emil Eirola, Anton Akusok, Yoan Miche, Kaj-Mikael Bjork and Amaury Lendasse
University of Iowa, United States; Arcada University of Applied Sciences, Finland; Bell Labs Nokia, Finland

9:40AM Functional Locality Preserving Projection for Dimensionality Reduction [#19090]

Song Xin, Jiang Xinwei, Gao Junbin, Cai Zhihua and Hong Xia

School of Computer Science, China University of Geosciences, China, China; The University of Sydney Business School,The University of Sydney, Australia, Australia; School of Mathematical, Physical, and Computational Sciences, University of Reading, Reading, U.K., United Kingdom

Session 6a-6c: NEUROENGINEERING

Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 6, Chair: Ibrahim Hossain and Tarek Taha

8:00AM Percentile range around the mean of center distance based informative transfer for motor imagery Brain-Computer Interface [#18329]

Ibrahim Hossain, Abbas Khosravi, Imali Hettiarachchi and Saeid Nahavandi

Deakin University, Australia

8:20AM Calibration Time Reduction for Motor Imagery-Based BCI Using Batch Mode Active Learning. [#18778]

Ibrahim Hossain, Abbas Khosravi, Imali Hettiarachchi and Saeid Nahavandi

Deakin Univeristy, Australia

8:40AM Twin Neural Networks for Efficient EEG Signal Classification [#18616]

Himanshu Pant, Sumit Soman, Prof Jayadeva and Mayank Sharma

PhD Candidate, EE Dept, IIT Delhi, India; Professor, EE Dept, IIT Delhi, India

9:00AM Adaptive Adversarial Transfer Learning for Electroencephalography Classification [#18070]

Tan Chuanqi, Sun Fuchun, Zhang Wenchang, Kong Tao, Yang Chao and Zhang Xinyu

Tsinghua University, China

9:20AM Analysis and Design of Memristor Crossbar Based Neuromorphic Intrusion Detection Hardware [#18885]

Chris Yakopcic and Tarek Taha

University of Dayton, United States

9:40AM iWalk: Interest-Aware Random Walk for Network Embedding [#18631]

Zan Wen, Zhou Chuan, Yang Hong, Hu Yue and Guo Li

Institute of Information Engineering, Chinese Academy of Sciences, China; Centre for Artificial Intelligence, University of Technology Sydney, Australia

Session 2a-2: Supervised learning

Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 7, Chair: Eduardo Max and Ronaldo Prati

8:00AM Augmented Space Linear Model [#18587]

Zhengda Qin, Badong Chen, Nanning Zheng and Jose C. Principe

Xi'an Jiaotong University, China; University of Florida, United States

8:20AM Improving Instance Selection via Metric Learning [#18557]

Eduardo Max, Ricardo Marcacini and Edson Matsubara

Universidade Federal de Mato Grosso do Sul, Brazil

8:40AM Adaptive Learning Models Evaluation in Twitter's Timelines [#18826]

Costa Joana, Silva Catarina, Antunes Mario and Ribeiro Bernardete

Polytechnic Institute of Leiria and University of Coimbra, Portugal; Polytechnic Institute of Leiria, Portugal; University of Coimbra, Portugal

9:00AM Using Complexity Measures to Evolve Synthetic Classification Datasets [#18568]

Vinicius Veloso de Melo and Ana Carolina Lorena

Federal University of Sao Paulo, Brazil; Federal University of Sao Paulo and Technological Institute of Aeronautics, Brazil

9:20AM Improving kNN classification under Unbalanced Data. A New Geometric Oversampling Approach [#18026]
Alexandre Carvalho and Ronaldo Prati
UFABC, Brazil

9:40AM Methodolgy Based on Texture, Color and Shape Features For Traffic Light Detection and Recognition. [#18047]
Julio Cesar da Silva Soares, Tiago Bonini Borchartt, Anselmo Cardoso de Paiva and Areolino de Almeida Neto
Federal University of Piaui, Brazil; Federal University of Maranhao, Brazil

Session SS17: Special Session on Concept drift, domain adaptation & learning in dynamic environments
Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 8, Chair: Giacomo Boracchi, Robi Polikar, Manuel Roveri, Gregory Ditzler

8:00AM Adaptive One-Class Ensemble-based Anomaly Detection: An Application to Insider Threats [#18115]
Diana Haidar and Mohamed Medhat Gaber
Miss, United Kingdom; Prof., United Kingdom

8:20AM Adaptive Incremental Gaussian Mixture Network for Non-Stationary Data Stream Classification [#18351]
Jorge C. Chamby-Diaz, Mariana Recamonde-Mendoza, Ana L. C. Bazzan and Ricardo Grunitzki
Universidade Federal do Rio Grande do Sul, Brazil

8:40AM Sleep Quality Estimation with Adversarial Domain Adaptation: From Laboratory to Real Scenario [#18398]
Jia-Jun Tong, Yun Luo, Bo-Qun Ma, Wei-Long Zheng, Bao-Liang Lu, Xiao-Qi Song and Shi-Wei Ma
Shanghai Jiao Tong University, China; China Railway Lanzhou Group Co., Ltd., China; China Academy of Railway Sciences, China

9:00AM Multimodal Vigilance Estimation with Adversarial Domain Adaptation Networks [#18415]
He Li, Wei-Long Zheng and Bao-Liang Lu
Shanghai Jiao Tong University, China

9:20AM Diversity-Based Pool of Models for Dealing with Recurring Concepts [#19021]
Chun Wai Chiu and Leandro Minku
University of Leicester, United Kingdom

9:40AM Resampling Techniques for Learning Under Extreme Verification Latency with Class Imbalance [#19084]
Christopher Frederickson and Robi Polikar
Rowan University, United States

Session 8a-1: Applications of deep networks
Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 9, Chair: Nicholas Buhagiar and Alvaro Correia

8:00AM Deep Dilated Convolution on Multimodality Time Series For Human Activity Recognition [#18271]
Rui Xi, Mengshu Hou, Mingsheng Fu, Hong Qu and Daibo Liu
University of Electronic Science and Technology of China, China

8:20AM Using Deep Learning to Recommend Discussion Threads to Users in an Online Forum [#18599]

Nicholas Buhagiar, Bahram Zahir and Abdolreza Abhari
Ryerson University, Canada; Microsoft, United States

8:40AM Generating Chinese Typographic and Handwriting Fonts from a Small Font Sample Set [#18641]
Lu Shao-Yi and Hsiang Tien-Ruey
National Taiwan University of Science and Technology, Taiwan

9:00AM A Fully Attention-Based Information Retriever [#18363]
Alvaro Henrique Chaim Correia, Jorge Luiz Moreira Silva, Thiago de Castro Martins and Fabio Gagliardi Cozman
Escola Politecnica - Universidade de Sao Paulo, Brazil

9:20AM Botnet Detection in the Internet of Things using Deep Learning Approaches [#18866]
Christopher McDermott, Andrei Petrovski and Farzan Shabestari
Robert Gordon University, United Kingdom

Session 2b-3: Unsupervised learning and clustering
Wednesday, July 11, 8:00AM-10:00AM, Room: Oceania 10, Chair: Alaa El Khatib and Jeremie Sublime

8:00AM Nonnegative Matrix Factorization Using Autoencoders and Exponentiated Gradient Descent [#18930]
Alaa El Khatib, Shimeng Huang, Ali Ghodsi and Fakhri Karray
University of Waterloo, Canada

8:20AM Augmenting The Size of EEG datasets Using Generative Adversarial Networks [#18698]
Sherif Abdelfattah, Ghodai Abdelrahman and Min Wang
PhD Candidate, Australia

8:40AM Deep Discriminative Clustering Network [#18343]
Xuying Shao, Keshi Ge, Huayou Su, Lei Luo, Baoyun Peng and Dongsheng Li
National University of Defence Technology, China

9:00AM Robust Locality Preserving Projection Based on Kernel Risk-Sensitive Loss [#18618]
Lei Xing, Yunqi Mi, Yuanhao Li and Badong Chen
Institute of Artificial Intelligence and Robotics Xian Jiaotong University, China

9:20AM An Entropy Maximization Approach to Optimal Dimensionality Reduction [#18155]
Aviv Dotan and Oren Shriki
Dept. of Cognitive and Brain Sciences, Ben-Gurion University of the Negev, Israel

9:40AM Collaborative Clustering through Constrained Networks using Bandit Optimization [#18735]
Jeremie Sublime and Sylvain Lefebvre
ISEP, France

Plenary Talk PL3: Information Theoretic Machine Learning, Jose Principe
Wednesday, July 11, 1:00PM-2:00PM, Room: ASIA 1, Chair: Carmelo Bastos-Filho

Session 2e-2: Deep learning
Wednesday, July 11, 2:10PM-4:10PM, Room: Oceania 4, Chair: Martin More and Dan Valle

2:10PM Seamless Nudity Censorship: an Image-to-Image Translation Approach based on Adversarial Learning [#18979]
Martin More, Douglas Souza, Jonatas Wehrmann and Rodrigo Barros
Pontificia Universidade Catolica do Rio Grande do Sul, Brazil

2:30PM Supervised Deep Dictionary Learning for Single Label and Multi-Label Classification [#18303]

Vanika Singhal and Angshul Majumdar
IIITD, India

2:50PM Effective Fashion Retrieval Based on Semantic Compositional Networks [#18116]
Dan Valle, Adriano Veloso and Nivio Ziviani
Kunumi and Universidade Federal de Minas Gerais, Brazil; Universidade Federal de Minas Gerais, Brazil

3:10PM A Novel Stochastic Stratified Average Gradient Method: Convergence Rate and Its Complexity [#18037]
Aixiang(Andy) Chen, Xiaolong Chai, Bingchuan Chen, Rui Bian and Qingliang Chen
Guangdong University of Finance and Economic, China; Jinan University, China

3:30PM Towards Predicting Dengue Fever Rates Using Convolutional Neural Networks and Street-Level Images [#18832]
Virginia Andersson, Marco Birck and Ricardo Araujo
Federal University of Pelotas (UFPEL), Brazil

3:50PM DeepSTCL: A Deep Spatio-temporal ConvLSTM for Travel Demand Prediction [#18401]
Dongjie Wang, Yan Yang and Shangming Ning
Southwest Jiaotong University, China

Session Cdss-06: Special Session on Interactive/Multiple Clustering using Evolutionary Computation, Fuzzy, Machine Learning and/or Neural Networks
Wednesday, July 11, 2:10PM-4:10PM, Room: Oceania 5, Chair: Marcilio de Souto, Andre de Carvalho, Christel Vrain, Guillaume Cleuziou

2:10PM Semi-Supervised Clustering with Multiresolution Autoencoders [#18051]
Dino Ienco and Ruggero Pensa
TETIS, IRSTEA, Univ Montpellier, LIRMM, Montpellier, France; Department of Computer Science, University of Turin, Turin, Italy

2:30PM Optimizing exchange confidence during collaborative clustering [#18090]
Jeremie Sublime, Denis Maurel, Nistor Grozavu, Basarab Matei and Younes Bennani
ISEP, France; University Paris 13, LIPN UMR 7030, France

2:50PM A Self Fixing Intelligent Ant Clustering Algorithm For Graphs [#18986]
Ying Ying Liu, Parimala Thulasiraman and Ruppa Thulasiram
University of Manitoba, Canada

3:10PM Data Complexity Measures for Imbalanced Classification Tasks [#18864]
Victor Barella, Luis Garcia, Marcilio de Souto, Ana Lorena and Andre de Carvalho
University of Sao Paulo, Brazil; Leipzig University, Germany; University of Orleans, France; Federal University of Sao Paulo, Brazil

3:30PM Automatic Cluster Labeling Based on Filagram Analysis [#18703]
Francisco Araujo, Vinicius Machado, Antonio Soares and Rodrigo Veras
Universidade Federal do Piaui, Brazil

Session 8a-2: Applications of deep networks
Wednesday, July 11, 2:10PM-4:10PM, Room: Oceania 6, Chair: Gilberto Xavier and Marcelo Borghetti

2:10PM Fault Detection and Diagnosis in a Chemical Process using Long Short-Term Memory Recurrent Neural Network [#18581]
Gilberto Xavier and Jose Manoel de Seixas
Petrobras, Brazil; Federal University of Rio de Janeiro, Brazil

2:30PM A Deep Learning Approach to Classify Aspect-Level Sentiment using Small Datasets [#18142]

Joao Aires, Carlos Alberto Padilha, Christian Quevedo and Felipe Meneguzzi
Pontifical Catholic University of Rio Grande do Sul, Brazil; Instituto Eldorado, Brazil

2:50PM Background Subtraction on Depth Videos with Convolutional Neural Networks [#18630]
Xueying Wang, Lei Liu, Guangli Li, Xiao Dong, Peng Zhao and Xiaobing Feng
Institute of Computing Technology, Chinese Academy of Sciences, China; Institute of Computing Technology, Chinese Academy of Sciences; Jilin University, China

3:10PM Point Cloud Object Recognition using 3D Convolutional Neural Networks [#18684]
Marcelo Borghetti Soares and Stefan Wermter
University of Hamburg, Germany

3:30PM SensoryGANs: An Effective Generative Adversarial Framework for Sensor-based Human Activity Recognition [#19095]
Jiwei Wang, Yiqiang Chen, Yang Gu, Yunlong Xiao and Haonan Pan
Institute of Computing Technology, Chinese Academy of Sciences, China

3:50PM Efficient Classification of Seismic Textures [#18769]
Daniel Salles Chevitarese, Daniela Szwarcman, Emilio Vital Brazil and Bianca Zadrozny
IBM Research, Brazil; IBM Research, PUC-Rio, Brazil

Session 2a-3: Supervised learning
Wednesday, July 11, 2:10PM-4:10PM, Room: Oceania 7, Chair: Alexander New and Jose-Ramon Cano

2:10PM Learning to Cluster for Proposal-Free Instance Segmentation [#18238]
Yen-Chang Hsu, Zheng Xu, Zsolt Kira and Jiawei Huang
Georgia Institute of Technology, United States; University of Maryland, United States; Honda Research Institute, United States

2:30PM Cadre Modeling: Simultaneously Discovering Subpopulations and Predictive Models [#18921]
Alexander New, Curt Breneman and Kristin Bennett
Rensselaer Polytechnic Institute, United States

2:50PM Symbols Classification in Engineering Drawings [#18160]
Eyad Elyan, Carlos Moreno-Garcia and Chrisina Jayne
Robert Gordon University, United Kingdom; Oxford Brookes University, United Kingdom

3:10PM An Experimental Perspective on Sampling Methods for Imbalanced Learning from Financial Databases [#18653]
Luis Eduardo Boiko Ferreira, Jean Paul Barddal, Heitor Murilo Gomes and Fabricio Enembreck
PPGIa - PUCPR, Brazil; Telecom ParisTech, France

3:30PM Similarity-based and Iterative Label Noise Filters for Monotonic Classification [#18267]
Jose-Ramon Cano, Julian Luengo and Salvador Garcia
University of Jaen, Spain; University of Granada, Spain

3:50PM Dynamic Feature Selection based on Pareto Front Optimization [#19132]
Jhoseph Jesus, Anne Canuto and Daniel Araujo
Federal University of Rio Grande do Norte, Brazil

Session 2i: Support vector machines and kernel methods
Wednesday, July 11, 2:10PM-4:10PM, Room: Oceania 9, Chair: Kan Li and Dmitrij Ivanov

2:10PM Surprise-Novelty Information Processing for Gaussian Online Active Learning (SNIP-GOAL) [#28049]
Kan Li and Jose Principe
University of Florida, United States

2:30PM Non-Mercer Large Scale Multiclass Least Squares Minimal Complexity Machines [#18652]
Mayank Sharma, Sumit Soman, Jayadeva Jayadeva and Himanshu Pant
Ph.D. Candidate, EE Dept, IIT Delhi, India; Professor, EE Dept, IIT Delhi, India

2:50PM Knowledge-Uncertainty Axiomatized Framework with Support Vector Machines for Sparse Hyperparameter Optimization [#18855]
Marcin Orchel
AGH University of Science and Technology, Poland

3:10PM Fast Compressor Map Computation by Utilizing Support Vector Machine and Response Surface Approximation [#18436]
Dmitrij Ivanov, Dieter Bestle and Christian Janke
Brandenburg University of Technology Cottbus-Senftenberg, Germany; Rolls-Royce Deutschland Ltd Co KG, Germany

3:30PM Terrain Classification for Autonomous Vehicles Using Bat-Inspired Echolocation [#18919]
Nathan Riopelle, Philip Caspers and Donald Sofge
University of Michigan, United States; Naval Undersea Warfare Center, United States; U.S. Naval Research Laboratory, United States

3:50PM Mining Daily Canonical Correlations among Multivariable Electricity, Gas and Climate Data [#19046]
Zigui Jiang, Rongheng Lin and Fangchun Yang
Beijing University of Posts and Telecommunications, China

Session 2b-4: Unsupervised learning and clustering
Wednesday, July 11, 2:10PM-4:10PM, Room: Oceania 10, Chair: Faicel Chamroukhi and Nicolas Astorga

2:10PM Regularized Maximum-Likelihood Estimation of Mixture-of-Experts for Regression and Clustering [#19143]
Faicel Chamroukhi and Bao Tuyen Huynh
University of Caen, UMR CNRS LMNO, France

2:30PM A new word embedding approach to evaluate potential fixes for automated program repair [#18472]
Leonardo Amorim, Mateus Freitas, Altino Dantas, Eduardo Souza, Celso Camilo-Junior and Wellington Martins
Federal University of Goias, Brazil

2:50PM Clustering of Astronomical Transient Candidates Using Deep Variational Embedding [#28045]
Nicolas Astorga, Pablo Huijse, Pablo Estevez and Francisco Forster
Universidad de Chile, Chile

3:10PM Ranking-Embedded Transfer Canonical Correlation Analysis for Person Re-Identification [#18123]
Linfei Ma, Xiang Zhang, Long Lan, Xuhui Huang and Zhigang Luo
College of Computer, National University of Defense Technology, China

3:30PM Detecting Communities in Networks Using Competitive Hopfield Neural Network [#18121]
Jin Ding, Yong-zhi Sun, Ping Tan and Yong Ning
Zhejiang University of Science and Technology, China

3:50PM DSDR: Dynamic Semantic Discard Reader for Open-Domain Question Answering [#18266]
Wang Xu, Huang Zhen, Zhang YiMing, Tan Ludan and Liu Yang
College of Computer, National University of Defense Technology, China

Plenary Poster Session POS3: Poster Session 3

Wednesday, July 11, 4:10PM-6:30PM, Room: Europa II , Chair: Leandro Minku and Rodrigo Soares

P501 NEGAN:Network Embedding based on Generative Adversarial Networks [#18439]

Yinfeng Ban, Juhua Pu, Yujun Chen and Yuanhong Wang

State Key Laboratory of Software Development Environment, Beihang University, Beijing, China;Research Institute of Beihang University in Shenzhen, Shenzhen, China, China

P502 Topological Evolution of Spiking Neural Networks [#18441]

Sam Slade and Li Zhang

Department of Computer and Information Sciences, Faculty of Engineering and Environment, Northumbria University, United Kingdom

P503 Soccer Video Super-Resolution via Sub-Pixel Convolutional Neural Network [#18452]

Haoyu Wang and Yao Lu

Beijing Institute of Technology, China

P504 Individual Interest and Trust Driving Collective Intelligence Awareness for Social Recommendation [#18454]

Lin Cui, Caiyin Wang, Jia Wu, Jian Yang and Quan Z. Sheng

Intelligent Information Processing Laboratory, Suzhou University, Suzhou, Anhui, China, China; Department of Computing, Macquarie University, Australia

P505 Large-Scale Linear NPSVM via One Permutation Hashing [#18455]

Jingjing Tang, Yingjie Tian and Dalian Liu

School of Mathematical Sciences, University of Chinese Academy of Sciences; Research Center on Fictitious Economy and Data Science, Chinese Academy of Sciences, China; Research Center on Fictitious Economy and Data Science, Chinese Academy of Sciences; School of Economics and Management, University of Chinese Academy of Sciences; Key Laboratory of Big Data Mining and Knowledge Management, Chinese Academy of Sciences, China; Department of Basic Course Teaching, Beijing Union University, China

P506 Clustering and Unsupervised Anomaly Detection with L2 Normalized Deep Auto-Encoder Representations [#18456]

Caglar Aytekin, Ni Xingyang, Cricri Francesco and Aksu Emre

Nokia Technologies, Finland

P507 Development of Resistive Memories Based on Silver doped Graphene Oxide for Neuron Simulation [#18457]

Marina Sparvoli and Jonas Marma

Universidade Federal do ABC, Brazil

P508 An Analysis on Community Detection and Clustering Algorithms on the Post-Processing of Association Rules [#18465]

Renan de Padua, Lais Pessine do Carmo, Veronica Oliveira de Carvalho and Solange Oliveira Rezende

Universidade de Sao Paulo, Brazil; Universidade Estadual Paulista, Brazil

P509 Document Image Retrieval Using Deep Features [#18509]

Kelly Lais Wiggers, Alceu de Souza Britto Junior, Laurent Heutte, Alessandro Lameiras Koerich and Luiz Eduardo S. Oliveira

Pontifical Catholic University of Parana, Brazil; Rouen University, France; Ecole de Technologie Superieure, Canada; Federal University of Parana, Brazil

P510 Distinguishing Highly Correlated Patterns using a Context Based Approach in Bidirectional Associative Memory [#18531]

Damiem Rolon-Merette, Thadde Rolon-Merette and Sylvain Chartier

University of Ottawa, Canada

P511 DRL Based Intelligent Joint Manipulator and Viewing Camera Control for Reaching Tasks and

Environments with Obstacles and Occluders [#18535]
Edward Staley, Kapil Katyal and Philippe Burlina
Johns Hopkins University Applied Physics Laboratory, United States

P512 Multi-feature Classification of Hyperspectral Image via Probabilistic SVM and Guided Filter [#18567]
Chengkun Zhang, Min Han and Meiling Xu
Dalian University of Technology, China

P513 Chaotic Time Series Online Prediction Based on Improved Kernel Adaptive Filter [#18570]
Shuhui Zhang, Min Han and Meiling Xu
Dalian University of Technology, China

P514 Outlier Detection Based on the Data Structure [#18586]
Feng Guo, Shi Canghong, Li Xiaojie, He Jia and Wu Xi
Chengdu University of Information Technology, China; Southwest Jiaotong University, China

P515 A Machine Learning-based Forensic Discriminator of Pornographic and Bikini Images [#18592]
Danilo Moreira and Joseana Fechine
Federal University of Campina Grande (UFCG), Brazil

P516 Classification of Mice Head Orientation Using Support Vector Machine and Histogram of Oriented Gradients Features [#18602]
Richardson Santiago Teles de Menezes, Lucas de Azevedo Lima, Orivaldo Santana, Aron Miranda Henriques-Alves, Rossana Moreno Santa Cruz and Helton Maia
Federal University of Rio Grande do Norte - UFRN, Brazil; Brain Insitute - UFRN, Brazil; Federal Institute of Paraiba - IFPB, Brazil

P517 Deep Learning Classification of Polygenic Obesity Using Genome Wide Association Study SNPs [#18604]
Casimiro Aday Curbelo Montanez, Paul Fergus, Almudena Curbelo Montanez, Abir Hussain, Dhiya Al-Jumeily and Carl Chalmers
Department of Computer Science, United Kingdom; Hospital Nuestra Senora de Guadalupe, Spain

P518 A Comparison of Graph Construction Methods for Semi-Supervised Learning [#18605]
Lilian Berton, Alneu de Andrade Lopes and Didier A. Vega-Oliveros
Universidade Federal de Sao Paulo, Brazil; Universidade de Sao Paulo, Brazil

P519 Hand Gesture Recognition and Real-time Game Control Based on A Wearable Band with 6-axis Sensors [#18606]
Yande Li, Taiqian Wang, Aamir Khan, Lian Li, Caihong Li, Yi Yang and Li Liu
Lanzhou university, China; Chongqing University, Pakistan; Chongqing University, China

P520 Hopf-Hopf Bifurcation and Chaos in A Ring Neural Oscillator due to A Single Shortcut [#18611]
Yo Horikawa, Ken'ichi Fujimoto and Haruna Matsushita
Kagawa University, Japan

P521 Top Down Gama Saliency - Learning to Search for Objects in Complex Scenes [#18614]
Ryan Burt and Jose Principe
University of Florida, United States

P522 Using Double Regularization to Improve the Effectiveness and Robustness of Fisher Discriminant Analysis as A Projection Technique [#18615]
Yuechi Jiang and Frank H. F. Leung
The Hong Kong Polytechnic University, Hong Kong

P523 Multi-modal Remote Sensing Image Classification for Low Sample Size Data [#18617]
Qi He, Yao Lee, Dongmei Huang, Shengqi He, Wei Song and Yanling Du
Ocean University of Shanghai, China

P524 Syllable-Based Acoustic Modeling with CTC for Multi-Scenarios Mandarin speech recognition [#18621]

Yuanyuan Zhao, Linhao Dong, Shuang Xu and Bo Xu

Institute of Automation, Chinese Academy of Sciences, China

P525 Multimodal Deep Neural Network with Image Sequence Features for Video Captioning [#18628]

Soichiro Oura, Tetsu Matsukawa and Einoshin Suzuki

Kyushu University, Japan

P526 Improvement of Energy Efficiency of Markov ACMV Systems based on PTS Information of Occupants [#18637]

Deqing Zhai, Tanaya Chaudhuri, Yeng Chai Soh, Xianhua Ou and Chaoyang Jiang

Nanyang Technological University, Singapore; Zhejiang University of Technology, China

P527 Convolutional Neural Network and Kernel Methods for Occupant Thermal State Detection using Wearable Technology [#19031]

Tanaya Chaudhuri, Deqing Zhai, Yeng Chai Soh, Hua Li, Lihua Xie and Xianhua Ou

Nanyang Technological University (NTU), Singapore, Singapore; Zhejiang University of Technology, Hangzhou, China

P528 Variance-based Feature Selection for Classification of Cancer Subtypes Using Gene Expression Data [#18643]

Aedan Roberts, Daniel Catchpoole and Paul Kennedy

University of Technology Sydney, Australia; The Children's Hospital at Westmead, Australia

P529 Unsupervised Learning of Depth and Pose Estimation based on Continuous Frame Window [#18655]

Suning Shang, Huaimin Wang, Pengfei Zhang and Bo Ding

National University of Defense Technology, China

P530 Semi-supervised Feature Selection Based on Least Square Regression with Redundancy Minimization [#18707]

Xu Siqi, Dai Jianhua and Shi Hong

Tianjin University, China; Hunan Normal University, China

P531 A Hybrid Sampling Method Based on Safe Screening for Imbalanced Datasets with Sparse Structure [#18723]

Hongbo Shi, Qigang Gao and Suqin Ji

Shanxi University of Finance and Economics, China; Dalhousie University, Canada

P532 Distilled Binary Neural Network for Monaural Speech Separation [#18725]

Xiuyi Chen, Guangcan Liu, Jing Shi, Jiaming Xu and Bo Xu

Institute of Automation, Chinese Academy of Sciences (CASIA). Beijing, China, China

P533 Generalized Maximum Correntropy-based Echo State Network for Robust Nonlinear System Identification [#18729]

Changhao Zhang, Yu Guo, Fei Wang and Badong Chen

Xi'an Jiaotong University, China

P534 Online Semi-supervised Growing Neural Gas for Multi-label Data Classification [#18730]

Samira Boulbazine, Guenael Cabanes, Basarab Matei and Younes Bennani

LIPN-CNRS, UMR 7030, University Paris 13, France

P535 Goat Leather Quality Classification Using Computer Vision and Machine Learning [#18732]

Renato F. Pereira, Claudio M. S. Medeiros and Pedro P. Reboucas Filho

Federal Institute of Ceara, Brazil

P536 Detection and classification of faults in induction generator applied into wind turbines through a machine learning approach [#18743]

Pedro Henrique Feijo Sousa, Navar de Medeiros M. Nascimento, Pedro Pedrosa Reboucas Filho

and Claudio Marques de Sa Medeiros
Instituto Federal de Educacao Ciencia e Tecnologia do Ceara, Brazil

P537 Recognition of Endangered Pantanal Animal Species using Deep Learning Methods [#18780]
Mauro Arruda, Gabriel Spadon, Jose Rodrigues-Jr, Wesley Goncalves and Bruno Brandoli
UFMS, Brazil; ICMC/USP, Brazil

P538 Towards automatically creating large labeled datasets for training question domain classifiers [#18784]
Leandro Tavares, Renato Silva and Tiago Almeida
Federal University of Sao Carlos (UFSCar), Brazil

P539 Research of Recharging Scheduling Scheme for Wireless Sensor Networks Based on Cuckoo Search [#18788]
Haotian Chang, Jing Feng, Chaofan Duan, Zhikang Xu and Min Yin
Institue of Meteorology and Oceanography National University of Defense Technology, China; Institue of Meteorology and Oceanography) National University of Defense Technology, China

P540 Matrix Factorization Based Collaborative Filtering with Resilient Stochastic Gradient Descent [#18790]
Ashraf Abdelbar, Islam Elnabarawy, Khalid Salama and Donald Wunsch
Department of Mathematics and Computer Science, Brandon University, Brandon, Manitoba, Canada; Applied Computational Intelligence Laboratory, Missouri University of Science and Technology, Rolla, Missouri, United States; School of Computing, University of Kent, Canterbury, United Kingdom

P541 Identity-preserving conditional generative adversarial network [#18268]
Zhonghua Zhai and Jian Zhai
Zhejiang University, China

P542 Deep Learning-based Cooperative Trail Following for Multi-Robot System [#18405]
Geng Mingyang, Li Yiying, Ding Bo and Wang Huaimin
College of Computer, National Key Laboratory of Parallel and Distributed Processing, National University of Defense Technology, China

P543 A Neural Generation-based Conversation Model Using Fine-grained Emotion-guide Attention [#19061]
Zhiheng Zhou, Man Lan and Yuanbin Wu
East China Normal University, China

P544 A Multi-Modal Chinese Poetry Generation Model [#18108]
Dayiheng Liu, Quan Guo, Wubo Li and Jiancheng Lv
Sichuan University, China

P545 Cost-sensitive Hybrid Neural Networks for Heterogeneous and Imbalanced Data [#18269]
Xinxin Jiang, Shirui Pan, Guodong Long, Jiang Chang, Jing Jiang and Chengqi Zhang
Centre for Artificial Intelligence, University of Technology Sydney, Australia; Committee of Management, Union Life Insurance Company, China

P546 Character-level Intrusion Detection Based on Convolutional Neural Networks [#18201]
Steven Zilong Lin, Yong Shi and Zhi Xue
Shanghai Jiaotong University, China

P547 A Novel Document Classification Algorithm Based on Statistical Features and Attention Mechanism [#18099]
Chao Li, Yanfen Cheng and Hongxia Wang
Wuhan University of technology, China

P548 A Uniform Performance Index for Ordinal Classification with Imbalanced Classes [#18461]
Wilson Silva, Joao Ribeiro Pinto and Jaime S. Cardoso

INESC-TEC, Portugal

Session 2e-3: Deep learning
Wednesday, July 11, 4:30PM-6:30PM, Room: Oceania 4, Chair: Jianhui Zhao and Ange Tato

4:30PM DHA: Lidar and Vision data Fusion-based On Road Object Classifier [#18451]
Jianhui Zhao, Xinyu Zhang, Hongbo Gao, Mo Zhou, Chanqi Tan and Chong Xue
Department of Computer Science and Technology, Tsinghua University, China; Information Technology Center, Tsinghua University, China; State Key Laboratory of Automotive Safety and Energy, Tsinghua University, China

4:50PM Object Detection Based on Hierarchical Multi-view Proposal Network for Autonomous Driving [#18726]
Jianhui Zhao, Xinyu Newman Zhang, Hongbo Gao, Jialun Yin, Mo Zhou and Chuanqi Tan
Department of Computer Science and Technology, Tsinghua University, China; Information Technology Center, Tsinghua University, China; State Key Laboratory of Automotive Safety and Energy, Tsinghua University, China

5:10PM FHEDN: A context modeling Feature Hierarchy Encoder-Decoder Network for face detection [#18104]
Zexun Zhou, Zhongshi He, Ziyu Chen, Yuanyuan Jia, Haiyan Wang, Jinglong Du, Dingding Chen, Lulu Wang and Jing Chen
Chongqing University, China; Chongqing Medical University, China; Sichuan Fine Arts Institute, China

5:30PM Distributionally Robust Games: Wasserstein Metric [#18809]
Jian Gao and Hamidou Tembine
New York University, United States

5:50PM Distance Correlation Autoencoder [#18514]
Rick Wang, Amir-Hossein Karimi and Ali Ghodsi
University of Waterloo, Canada

6:10PM Semi-Supervised Multimodal Deep Learning Model for Polarity Detection in Arguments [#19049]
Ange Tato, Roger Nkambou, Aude Dufresne and Claude Frasson
Universite du Quebec a Montreal, Canada; Universite de Montreal, Canada

Session 8l-2: Temporal data analysis, prediction, and forecasting; time series analysis
Wednesday, July 11, 4:30PM-6:30PM, Room: Oceania 5, Chair: Rohitash Chandra and Diogo M. Almeida

4:30PM Multi-task modular backpropagation for dynamic time series prediction [#18577]
Rohitash Chandra
Centre for Translational Data Science, The University of Sydney, Australia

4:50PM Financial time series forecasting using non-linear methods and Stacked Autoencoders [#18751]
Danilo Pereira, Natanael Moura Junior and Luiz Caloba
Signal Processing Laboratory - UFRJ, Brazil

5:10PM Methods to Improve Multi-Step Time Series Prediction [#18888]
Arief Koesdwiady, Alaa El Khatib and Fakhri Karray
University of Waterloo, Canada

5:30PM Hybrid Time Series Forecasting Models Applied to Automotive On-Board Diagnostics Systems [#18909]
Diogo M. Almeida, Paulo S. G. de Mattos Neto and Daniel C. Cunha

CIn - UFPE, Brazil

5:50PM Association Learning based Hybrid Model for Cloud Workload Prediction [#19033]
Siddhant Kumar, Neha Muthiyan, Shaifu Gupta, Dileep A.D. and Aditya Nigam
School of Computing and Electrical Engineering, Indian Institute of Technology Mandi, India

6:10PM Deep Convolutional Neural Networks with Random Subspace Learning for Short-term Traffic Flow Prediction with Incomplete Data [#19055]
Shijie Liao, Jing Chen, Jiaxin Hou, Qingyu Xiong and Junhao Wen
Chongqing University, China

Session 8a-3: Applications of deep networks
Wednesday, July 11, 4:30PM-6:30PM, Room: Oceania 6, Chair: Sasa Janjic and Emerson Correia Lima

4:30PM Perceptual-DualGAN: Perceptual Losses for Image to Image Translation with Generative Adversarial Nets [#18310]
Xuexin Qu, Xin Wang, Zihan Wang, Lei Wang and Lingchen Zhang
Institute of Information Engineering, Chinese Academy of Sciences, China

4:50PM Real-Time Detection of Pedestrian Traffic Lights for Visually-Impaired People [#18682]
Marcelo C. Ghilardi, Gabriel Simoes, Jonatas Wehrmann, Isabel H. Manssour and Rodrigo C. Barros
Escola Politecnica, Pontificia Universidade Catolica do Rio Grande do Sul, Brazil

5:10PM A Benchmark for Iris Location and Deep Learning Detector Evaluation [#18917]
Evair Severo, Rayson Laroca, Cides S. Bezerra, Luiz A. Zanlorensi, Daniel Weingaertner, Gladston Moreira and David Menotti
Federal University of Parana (UFPR), Brazil; Federal University of Ouro Preto (UFOP), Brazil

5:30PM Estimating Protein Structure Prediction Models Quality Using Convolutional Neural Networks [#18831]
Emerson Correia Lima, Fabio Lima Custodio, Gregorio Kappaun Rocha, Helio Jose Correa Barbosa and Laurent Emmanuel Dardenne
Laboratorio Nacional de Computacao Cientifica, Brazil

5:50PM An Ensemble of Convolutional Neural Networks for Unbalanced Datasets: A case Study with Wagon Component Inspection [#18876]
Everlandio Fernandes, Rafael Rocha, Bruno Ferreira, Eduardo Carvalho, Ana Carolina Siravenha, Ana Claudia Gomes, Schubert Carvalho and Cleidson de Souza
Instituto Tecnologico Vale, Brazil; SENAI Innovation Institute for Mineral Technologies, Brazil

6:10PM Redundancy in Convolutional Neural Networks: Insights on Model Compression and Structure [#19122]
Sasa Janjic, Parimala Thulasiraman and Neil Bruce
University of Manitoba, Canada

Session 8n-1: Data mining and knowledge discovery
Wednesday, July 11, 4:30PM-6:30PM, Room: Oceania 7, Chair: Cangfeng Ding and Shubham Maheshwari

4:30PM Centrality Ranking via Topologically Biased Random Walks in Multiplex Networks [#18065]
Cangfeng Ding and Kan Li
Beijing Institute of Technology,Yanan University, China; Beijing Institute of Technology, China

4:50PM A Network Anomaly Detection Algorithm based on Natural Neighborhood Graph [#18168]
Renyu Liu and Qingsheng Zhu
Chongqing University, China

5:10PM On Learning Community-specific Similarity Metrics for Cold-start Link Prediction [#18173]
Linchuan Xu, Xiaokai Wei, Jiannong Cao and Philip Yu
The Hong Kong Polytechnic University, Hong Kong; University of Illinois at Chicago, United States

5:30PM Unsupervised Learning to Rank Aggregation using Parameterized Function Optimization [#18259]
Amirhossein Tavanaei, Raju Gottumukkala, Anthony Maida and Vijay Raghavan
University of Louisiana at Lafayette, United States

5:50PM Hierarchical Autoencoder for Collaborative Filtering [#18305]
Shubham Maheshwari and Angshul Majumdar
IIITD, India

6:10PM Doubly Label Consistent Autoencoder: Accounting User and Item Metadata in Recommender Systems [#18316]
Shantanu Jain and Angshul Majumdar
IIITD, India

Session SS2-1: Special Session on Machine Learning and Deep Learning Methods applied to Vision and Robotics (MLDLMVR)
Wednesday, July 11, 4:30PM-6:30PM, Room: Oceania 9, Chair: Jose Garcia-Rodriguez, Alexandra Psarrou, Isabelle Guyon, Andrew Lewis

4:30PM Finding the place: how to train and use convolutional neural networks for a dynamically learning robot [#18908]
Edmanuel Cruz, Jose Carlos Rangel, Francisco Gomez-Donoso, Zuria Bauer, Miguel Cazorla and Jose Garcia-Rodriguez
University of Alicante, Spain; Universidad Tecnologica de Panama, Panama

4:50PM Multi-spectral missing label prediction via restoration using deep residual dictionary learning [#19044]
Karthik Seemakurthy, Jayavardhana Gubbi, Shailesh Deshpande, Balamuralidhar Purushothaman and Angshul Majumdar
TCS Research and Innovation, India; IIIT Delhi, India

5:10PM A Comparative Study of Object Tracking using CNN and SDAE [#19056]
Wei Yang, Wei Wang, Yang Gao and Zhanpeng Jin
Binghamton University, United States; University at Buffalo, United States

5:30PM More Realistic and Efficient Face-Based Mobile Authentication using CNNs [#19108]
Abhijit Das, Abira Sengupta, Muhammad Saqib, Umapada Pal and Michael Blumenstein
Inria, France; KGEC, India; UTS, Australia; ISI, Kolkata, India

5:50PM SegNetRes-CRF: A Deep Convolutional Encoder-Decoder Architecture for Semantic Image Segmentation [#28028]
Luiz Junior, Heitor Medeiros, David Macedo, Cleber Zanchettin, Adriano Oliveira and Teresa Ludermir
Centro de Informatica, Brazil

6:10PM Convolutional Neural Networks for Automated Targeted Analysis of Raw Gas Chromatography - Mass Spectrometry Data [#18768]
Angelika Skarysz, Yaser Alkhalifah, Kareen Darnley, Michael Eddleston, Yang Hu, Duncan B McLaren, William H Nailon, Dahlia Salman, Martin Sykora, C L Paul Thomas and Andrea Soltoggio
Loughborough University, United Kingdom; NHS Lothian, Edinburgh, United Kingdom; University of Edinburgh, United Kingdom

Session 8e-2: Data analysis and pattern recognition
Wednesday, July 11, 4:30PM-6:30PM, Room: Oceania 10, Chair: Catarina Silva and Marco Vannucci

4:30PM Dynamic Human Gait VGRF Reference Profile Generation via Extreme Learning Machine [#18442]
Alexandra Vieira, Bernardete Ribeiro, Joao P. Ferreira, Heloisa Sobral, A. Paulo Coimbra, Manuel Crisostomo and Tao Liu
CISUC, Dept. of Informatics Engineering, Univ. of Coimbra, Portugal; Dept. of Electrical Eng., Superior Institute of Eng. of Coimbra, Institute of Systems and Robotics,Univ. of Coimbra, Portugal; Dept. of Electrical and Computer Eng., Institute of Systems and Robotics, Univ. of Coimbra, Portugal; State Key Laboratory of Fluid Power and Mechatronic Systems, School of Mechanical Engineering, Zhejiang University, Hangzhou 310027, China

4:50PM Segmentation-Free Approaches for Handwritten Numeral String Recognition [#18575]
Andre Hochuli, Luiz Oliveira, Alceu Britto Jr and Robert Sabourin
Federal University of Parana, Brazil; Pontifical Catholic University of Parana, Brazil; Ecole de Technologie Superieure, Canada

5:10PM Self Organizing Maps Based Undersampling for the Classification of Unbalanced Datasets [#18742]
Marco Vannucci and Valentina Colla
Scuola Superiore Sant'Anna, Italy

5:30PM Active Learning with Realistic Data - A Case Study [#18747]
Adrian Calma, Moritz Stolz, Daniel Kottke, Sven Tomforde and Bernhard Sick
Intelligent Embedded Systems, Germany

5:50PM Effects of Data Sparsity on Recommender Systems based on Collaborative Filtering [#18750]
Joao Felipe Silva, Natanael Moura Junior and Luiz Caloba
Signal Processing Laboratory - UFRJ, Brazil

6:10PM Image Dehazing for Object Recognition using Faster RCNN [#18756]
Bhanu Teja Nalla, Teena Sharma, Nishchal K. Verma and S. R. Sahoo
Indian Institute of Technology Kanpur, India, India

Session 8n-2: Data mining and knowledge discovery
Thursday, July 12, 8:00AM-10:00AM, Room: Oceania 4, Chair: Gabriel Pinheiro and Murilo Schmitt

8:00AM Mining Port Congestion Indicators from Big AIS Data [#18336]
Ibrahim Abualhaol, Rafael Falcon, Rami Abielmona and Emil Petriu
University of Ottawa, Canada; Larus Technologies, Canada

8:20AM Distant Supervision for Relation Extraction with Hierarchical Attention and Entity Descriptions [#18435]
She Heng, Wu Bin, Wang Bai and Chi Renjun
Beijing University of Posts and Telecommunications, China

8:40AM Dual Learning based Multi-Objective Pairwise Ranking [#18444]
Zhenyu Zhang and Juan Yang
Beijing University of Posts and Telecommunications, China

9:00AM Employing Domain Specific Discriminative Information to Address Inherent Limitations of the LBP Descriptor in Face Recognition [#18862]
Junjie Fan and Ognjen Arandjelovic
University of St Andrews, United Kingdom

9:20AM On democratic evaluation of nodes representativity [#18871]
Gabriel Pinheiro and Bilza Araujo

Federal University of Bahia, Brazil; Federal University of Southern Bahia, Brazil

9:40AM Outlier Detection on Semantic Space for Sentiment Analysis With Convolutional Neural Networks [#18901]
Murilo Schmitt and Eduardo Spinosa
Federal University of Parana, Brazil

Session 8o: Power system applications
Thursday, July 12, 8:00AM-10:00AM, Room: Oceania 5, Chair: H M Dipu Kabir and Jingyi Zhang

8:00AM Weighted Autocorrelation based Prediction Interval Optimization for Wind Power Generation [#18029]
H M Dipu Kabir, Anwar Hosen, Abbas Khosravi and Saeid Nahavandi
Deakin University, Australia

8:20AM Learning Insulators Segmentation from Synthetic Samples [#18073]
Wenkai Chang, Guodong Yang, Zhengxing Wu and Zize Liang
University of Chinese Academy of Sciences, China; Institute of Automation, Chinese Academy of Sciences, China

8:40AM Solving economic dispatch problem under valve-point loading effects and generation constrains using a multi-gradient PSO algorithm [#18074]
Loau Al-Bahrani, Jagdish Patra and Alex Stojcevski
Swinburne University of Technology, Australia

9:00AM High Impedance Fault Detection in Time-Varying Distributed Generation Systems Using Adaptive Neural Networks [#18083]
Fabricio Lucas, Pyramo Costa, Rose Batalha and Daniel Leite
Pontifical Catholic University of Minas Gerais, Brazil; Federal University of Lavras, Brazil

9:20AM Static and Dynamic Ensembles of Neural Networks for Solar Power Forecasting [#18553]
Zheng Wang, Irena Koprinska, Alicia Troncoso and Francisco Martinez-Alvarez
University of Sydney, Australia; University Pablo de Olavide, Spain

9:40AM Deep Reinforcement Learning for Short-term Voltage Control by Dynamic Load Shedding in China Southern Power Grid [#18573]
Jingyi Zhang, Chao Lu, Jennie Si, Jie Song and Yinsheng Su
Tsinghua University, China; Arizona State University, United States; Peking University, China; China Southern Power Grid, China

Session 8a-4 : Applications of deep networks
Thursday, July 12, 8:00AM-10:00AM, Room: Oceania 6, Chair: Rim Haidar and Giovanni Acampora

8:00AM Convolutional Neural Networks on Multiple Respiratory Channels to Detect Hypopnea and Obstructive Apnea Events [#19037]
Rim Haidar, Stephen McCloskey, Irena Koprinska and Bryn Jeffries
University of Sydney, Australia

8:20AM Fine-Grained Air Quality Prediction using Attention Based Neural Network [#18668]
Tianyu Liu, Yongzhi Ying, Yanyan Xu, Dengfeng Ke and Kaile Su
School of Information Science and Technology, Beijing Forestry University, China; National Laboratory of Pattern Recognition, Institute of Automation, China; School of Information and Communication Technology, Griffith University, China

8:40AM Using CNN to Classify Spectrograms of Seismic Events from Llaima Volcano (Chile) [#18483]
Millaray Curilem, Joao Paulo Canario, Luis Franco and Ricardo Rios
Universidad de La Frontera, Chile; Universidade Federal da Bahia, Brazil; Observatorio

Vulcanologico de los Andes Sur, Chile

9:00AM Object Classification in Thermal Images using Convolutional Neural Networks for Search and Rescue Missions with Unmanned Aerial Systems [#18523]

Christopher Dahlin Rodin, Luciano Netto de Lima, Fabio Augusto de Alcantara Andrade, Diego Barreto Haddad, Tor Arne Johansen and Rune Storvold

Maritime Robotics / Norwegian University of Science and Technology, Norway; Federal Center of Technological Education of Rio de Janeiro, Brazil; Northern Research Institute / Norwegian University of Science and Technology / Federal Center of Technological Education of RJ, Norway; Norwegian University of Science and Technology, Norway; Northern Research Institute, Norway

9:20AM Improving Human Action Recognition through Hierarchical Neural Network Classifiers [#18447]

Pavel Zhdanov, Adil Khan, Adin Ramirez Rivera and Asad Masood Khattak

Innopolis University, Russian Federation; University of Campinas, Brazil; Zayed University, United Arab Emirates

9:40AM A Multimodal Deep Learning Network for Group Activity Recognition [#19120]

Silvia Rossi, Roberto Capasso, Giovanni Acampora and Mariacarla Staffa

Department of Electrical Engineering and Information Technologies, University of Naples Federico II, Italy; Department of Physics, University of Naples Federico II, Italy

Session 8u: Clinical applications

Thursday, July 12, 8:00AM-10:00AM, Room: Oceania 7, Chair: Alexander Katzmann and Carolina Carvalho

8:00AM TumorEncode - Deep Convolutional Autoencoder for Computed Tomography Tumor Treatment Assessment [#18131]

Alexander Katzmann, Alexander Muehlberg, Michael Suehling, Dominik Noerenberg, Julian Walter Holch and Horst-Michael Gross

Siemens Healthcare GmbH, Germany; University Hospital Grosshadern, Ludwig-Maximilians-University Munich, Germany; University of Technology Ilmenau, Germany

8:20AM Multi-label Classification of Surgical Tools with Convolutional Neural Networks [#18191]

Jonas Prellberg and Oliver Kramer

University of Oldenburg, Germany

8:40AM Instance Tumor Segmentation using Multitask Convolutional Neural Network [#18232]

Rezaei Mina, Yang Haojin and Meinel Christoph

Hasso plattner Institute, Germany

9:00AM A System for Aiding Diagnosis of Alzheimer's Disease and Related Disorders with an Adaptable Decision Model [#18674]

Carolina Carvalho, Flavio Seixas, Debora Muchaluat-Saade, Aura Conci, Yolanda Boechat and Jerson Laks

Fluminense Federal University, Brazil; Federal University of Rio de Janeiro, Brazil

9:20AM Identification of thyroid nodules in infrared images by convolutional neural networks [#18991]

Maira Moran, Aura Conci, Jose Gonzalez, Adriel Araujo, Wilian Fiirst, Charbel Damiao, Giovanna Lima and Rubens Filho

Universidade Federal Fluminense, Brazil

9:40AM Gradient Boosting Decision Trees for Echocardiogram Images [#18946]

Vinicius Veloso de Melo, Daniela Mayumi Ushizima, Salety Ferreira Baracho and Regina Celia Coelho

Federal University of Sao Paulo, Brazil; CRD, Lawrence Berkeley National Laboratory, United States

Session 2c-d: Reinforcement and Semi-supervised learning
Thursday, July 12, 8:00AM-10:00AM, Room: Oceania 9, Chair: Adriao Duarte Doria and Thiago B. F. de Oliveira

8:00AM Q-Learning with Dynamic Rewards Table Applied to the SONET/SDH Ring Problem [#18822]
Thiago Henrique Freire de Oliveira, Adriao Duarte Doria and Jorge Dantas Melo
Universidade Federal do Rio Grande do Norte, Brazil; Universidade Federa do Rio Grande do Norte, Brazil

8:20AM Impacts of Mathematical Optimizations on Reinforcement Learning Policy Performance [#18827]
Sam Green, Craig Vineyard and Cetin Koc
Sandia National Laboratories, United States; University of California Santa Barbara, United States

8:40AM Automatic Adjustment of Confidence Values in Self-training Semi-supervised Method [#19125]
Karliane Medeiros Ovidio Vale, Anne Magaly de Paula Canuto, Araken de Medeiros Santos, Flavius da Luz e Gorgonio, Alan de Medeiros Tavares, Arthur Costa Gorgonio and Cainan Teixeira Alves
Federal University of Rio Grande do Norte (UFRN), Brazil; Federal Rural University of Semi-Arido, Brazil

9:00AM Manifold Correlation Graph for Semi-Supervised Learning [#18744]
Lucas Valem, Daniel Pedronette, Fabricio Breve and Ivan Rizzo
Sao Paulo State University UNESP, Rio Claro, Brazil

9:20AM Towards Designing Optimal Reward Functions in Multi-Agent Reinforcement Learning Problems [#18323]
Ricardo Grunitzki, Bruno C. da Silva and Ana L. C. Bazzan
Universidade Federal do Rio Grande do Sul - UFRGS, Brazil

9:40AM Comparing Multi-Armed Bandit Algorithms and Q-learning for Multiagent Action Selection: a Case Study in Route Choice [#18354]
Thiago B. F. de Oliveira, Ana L. C. Bazzan, Bruno C. da Silva and Ricardo Grunitzki
Federal University of Rio Grande do Sul, Brazil

Session SS2-2: Special Session on Machine Learning and Deep Learning Methods applied to Vision and Robotics (MLDLMVR)
Thursday, July 12, 8:00AM-10:00AM, Room: Oceania 10, Chair: Jose Garcia-Rodriguez, Alexandra Psarrou, Isabelle Guyon, Andrew Lewis

8:00AM Super-resolution of 3D Magnetic Resonance Images by Random Shifting and Convolutional Neural Networks [#18136]
Karl Thurnhofer-Hemsi, Ezequiel Lopez-Rubio, Nuria Roe-Vellve, Enrique Dominguez and Miguel A. Molina-Cabello
University of Malaga, Spain; General Foundation of the University of Malaga, Spain

8:20AM Distance Estimation Using a Bio-Inspired Optical Flow Strategy Applied to Neuro-Robotics [#18137]
Hiram Ponce, Jorge Brieva and Ernesto Moya-Albor
Universidad Panamericana, Mexico

8:40AM Defect classification in shearography images using convolutional neural networks [#18229]
Herberth Birck Frohlich, Analucia Vieira Fantin, Bernardo Cassimiro Fonseca de Oliveira, Daniel Pedro Willemann, Lucas Arrigoni Iervolino, Mauro Benedet and Armando Goncalves

Albertazzi
Universidade Federal de Santa Catarina, Brazil; Universidade do Estado de Santa Catarina, Brazil

9:00AM Deep Barcodes for Fast Retrieval of Histopathology Scans [#18272]
Meghana Dinesh Kumar, Morteza Babaie and Hamid Tizhoosh
University of Waterloo, Canada; Amirkabir University of Technology, Iran

9:20AM Path Planning of Multiagent Constrained Formation through Deep Reinforcement Learning [#18974]
Zezhi Sui, Zhiqiang Pu, Jianqiang Yi and Xiangmin Tan
Institute of Automation, Chinese Academy of Sciences, China

9:40AM Apprenticeship Bootstrapping [#18561]
Hung Nguyen, Garratt Mathew and Abbass Hussein
UNSW Canberra, Australia

Plenary Talk PL4: AutoML: Automating Machine Learning, Andre Carvalho
Thursday, July 12, 1:00PM-2:00PM, Room: ASIA 1, Chair: Teresa Ludermir

Session 8s: Manufacturing and industrial applications
Thursday, July 12, 2:10PM-4:10PM, Room: Oceania 4, Chair: Siddharth Dadhich and Igor Sousa

2:10PM Predicting bucket-filling control actions of a wheel-loader operator using a neural network ensemble. [#18125]
Siddharth Dadhich, Fredrik Sandin and Ulf Bodin
Lulea University of Technology, Sweden

2:30PM Gated Recurrent Units Based Neural Network For Tool Condition Monitoring [#18311]
Huan Xu, Chong Zhang, Geok Soon Hong, Keng Soon Woon, Jun Hong Zhou and Jihoon Hong
National University of Sinapore, Singapore; Singapore Institute of Manufacturing Technology, A*STAR, Singapore

2:50PM Anomaly Machine Component Detection by Deep Generative Model with Unregularized Score [#18408]
Takashi Matsubara, Ryosuke Tachibana and Kuniaki Uehara
Kobe University, Japan

3:10PM Feature extraction analysis using filter banks for faults classification in induction motors [#18564]
Jhonattan Bulla, Alvaro Orjuela-Canon and Oscar Florez
Universidad Antonio Narino, Colombia; Universidad Distrital Francisco Jose de Caldas, Colombia

3:30PM Unsupervised Wafermap Patterns Clustering via Variational Autoencoders [#18715]
Peter Tulala, Hamidreza Mahyar, Elahe Ghalebi and Radu Grosu
Vienna University of Technology, Austria

3:50PM Estimation of global solar irradiance with LDR sensor and artificial neural network embedded in an 8-bit microcontroller [#18887]
Igor Sousa, Rogerio Segundo, Claudio Medeiros and Elias Silva JR.
Federal Institute of Education, Science and Technology of Ceara, Brazil

Session CDSS22-1: Special Session on Blockchain Research and Applications
Thursday, July 12, 2:10PM-4:10PM, Room: Oceania 5, Chair: Alex Lipton, Nicolas Courtois, Jon Matonis, Nikola Kasabov, Antoaneta Serguieva

2:10PM The Horcrux Protocol: A Method for Decentralized Biometric-based Self-sovereign Identity [#18350]
Asem Othman and John Callahan
Veridium IP Ltd, United States

2:30PM The Next Evolution in Funding Innovation [#18380]
Gabriel Dusil and Dalibor Cerny
Co-founder, Adel, Czech Republic; Finance Lawyer, Czech Republic

2:50PM EtherSat Protocol: A Blockchain Approach to Efficient Satellite Connectivity [#18407]
Aaron Cohen, Luke Duncan and Alex Edwards
EtherSat, Inc., United States

3:10PM Self-Aware Smart Contracts with Legal Relevance [#18544]
Alex Norta
Large-Scale-Systems Group Tallinn University of Technology, 19086, Tallinn, Estonia, Estonia

3:30PM A Privacy-Protecting Data-Exchange Wallet with Ownership- and Monetization Capabilities [#18760]
Alexander Norta, Daniel Hawthorne and Serafin Engel
Large-Scale-Systems Group, Tallinn University of Technology, Akadeemia tee 15a, 12616 Tallinn, Estonia, Estonia; Pnyks Inc., 55E 3rd Ave San Mateo, CA 94401, USA, United States

Session 8a-5: Applications of deep networks
Thursday, July 12, 2:10PM-4:10PM, Room: Oceania 6, Chair: Francesco Caliva and Zheng Wang

2:10PM A Frequency Domain Neural Network for Fast Image Super-resolution [#18627]
Li Junxuan, You Shaodi and Robles-Kelly Antonio
Australian National University, Australia; Data61-CSIRO, Australia

2:30PM A Deep Learning Approach to Anomaly Detection in Nuclear Reactors [#18844]
Francesco Caliva, Fabio De Sousa Ribeiro, Antonios Mylonakis, Christophe Demaziere, Paolo Vinai, Georgios Leontidis and Stefanos Kollias
University of Lincoln, United Kingdom; Chalmers University of Technology, Sweden

2:50PM ST-DRN: Deep Residual Networks for Spatio-Temporal Metro Stations Crowd Flows Forecast [#18422]
Yang Ning, Yang Huang, Jinyang Li, Qi Liu, Disheng Yang, Wei Zheng and Hengchang Liu
University of Science and Technology of China, China; The Comprehend Company, China

3:10PM Convolutional Neural Networks for Energy Time Series Forecasting [#19048]
Irena Koprinska, Dengsong Wu and Zheng Wang
University of Sydney, Australia

3:30PM DeepOrigin: End-to-End Deep Learning for Detection of New Malware Families [#19052]
Ilay Cordonsky, Ishai Rosenberg, Guillaume Sicard and Eli (Omid) David
Deep Instinct Ltd, Israel

3:50PM Character Level based Detection of DGA Domain Names [#18899]
Bin Yu, Jie Pan, Jiaming Hu, Anderson Nascimento and Martine De Cock
Infoblox, United States; University of Washington Tacoma, United States

Session 9: CROSS-DISCIPLINARY TOPICS
Thursday, July 12, 2:10PM-4:10PM, Room: Oceania 7, Chair: Fernando Osorio and Diego Galeano

2:10PM 2000 Qubit D-Wave Quantum Computer Replacing MCMC for RBM Image Reconstruction and Classification [#18495]
Yaroslav Koshka and M.A. Novotny

Department of Electrical and Computer Engineering, HPC2 Distributed Analytics and Security Institute, Mississippi State University, United States; Department of Physics and Astronomy, HPC2 Center for Computational Sciences, Mississippi State University, United States

2:30PM A Recommender System Approach for Predicting Drug Side Effects [#19035]
Diego Galeano and Alberto Paccanaro
Royal Holloway, University of London, United Kingdom

2:50PM An Event-Based Cochlear Filter Temporal Encoding Scheme for Speech Signals [#18920]
Zihan Pan, Yansong Chua, Haizhou Li and Jibin Wu
National University of Sinagapore, Singapore; Agency for Science, Technology and Research, Singapore

3:10PM Neurogenetic algorithm applied to Route Planning for Autonomous Mobile Robots [#18182]
Diego Bruno, Norian Marranghello, Fernando Osorio and Aledir Pereira
University of Sao Paulo, Brazil; UNESP - Paulista State University, Brazil

3:30PM Adaptive Window Strategy for Topic Modeling in Document Streams [#19004]
Pierre-Alexandre Murena, Marie Al Ghossein, Talel Abdessalem and Antoine Cornuejols
Telecom ParisTech, France; AgroParisTech, France

Session 8 : Applications
Thursday, July 12, 2:10PM-4:10PM, Room: Oceania 9, Chair: Leandro Maia Silva and Joao Bertini

2:10PM Arithmetic Circuit Classification Using Convolutional Neural Networks [#18798]
Leandro Maia Silva, Fabricio Vivas Vivas, Antonio Otavio Fernandes and Luiz Filipe Menezes Vieira
UFMG, Brazil; CEFET-MG, Brazil

2:30PM Enhancement of Deep Architecture using Dropout / DropConnect Techniques Applied for AHR System [#18881]
Mohamed Elleuch, Adel M. Alimi and Monji Kherallah
National School of Computer Science (ENSI), University of Manouba, Tunisia, Tunisia; National Engineering School of Sfax (ENIS), University of Sfax, Tunisia, Tunisia; Faculty of Sciences, University of Sfax, Tunisia, Tunisia

2:50PM Text Classification based on Word Subspace with Term-Frequency [#18944]
Erica K. Shimomoto, Lincon S. Souza, Bernardo B. Gatto and Kazuhiro Fukui
University of Tsukuba, Japan

3:10PM Approaching miRNA Family Classification Through Constructive Neural Networks [#18234]
Joao Bertini, Viviani Kasahara and Maria Nicoletti
Universidade Estadual de Campinas, Brazil; Universidade de Sao Paulo, Brazil; Faculdade Campo Limpo Paulista e Universidade Federal de Sao Carlos, Brazil

3:30PM Deep Spiking Neural Network model for time-variant signals classification: a real-time speech recognition approach [#18626]
Juan Pedro Dominguez-Morales, Qian Liu, Robert James, Daniel Gutierrez-Galan, Angel Jimenez-Fernandez, Simon Davidson and Steve Furber
Robotics and Technology of Computers Lab. (University of Seville), Spain; Advanced Processor Technologies Group, United Kingdom

3:50PM Mapping Road Lanes Using Laser Remission and Deep Neural Networks [#19097]
Raphael V. Carneiro, Rafael C. Nascimento, Ranik Guidolini, Vinicius B. Cardoso, Thiago Oliveira-Santos, Claudine Badue and Alberto F. De Souza
Universidade Federal do Espirito Santo, Brazil

Session SS2-3: Special Session on Machine Learning and Deep Learning Methods applied to Vision

and Robotics (MLDLMVR)
Thursday, July 12, 2:10PM-4:10PM, Room: Oceania 10, Chair: Jose Garcia-Rodriguez, Alexandra Psarrou, Isabelle Guyon, Andrew Lewis

2:10PM A New Self-Organizing Neural Gas Model based on Bregman Divergences [#18308]
Esteban J. Palomo, Miguel A. Molina-Cabello, Ezequiel Lopez-Rubio and Rafael M. Luque-Baena
University of Malaga, Spain

2:30PM Deep learning-based anomalous object detection system powered by microcontroller for PTZ cameras [#18609]
Jesus Benito-Picazo, Enrique Dominguez, Esteban J. Palomo, Ezequiel Lopez-Rubio and Juan Miguel Ortiz-de-Lazcano-Lobato
Universidad de Malaga, Spain

2:50PM Road pollution estimation using static cameras and neural networks [#18749]
Miguel A. Molina-Cabello, Rafael Marcos Luque-Baena, Ezequiel Lopez-Rubio, Lipika Deka and Karl Thurnhofer-Hemsi
University of Malaga, Spain; De Montfort University, United Kingdom

3:10PM A New Dataset and Performance Evaluation of a Region-based CNN for Urban Object Detection [#18799]
Alex Dominguez-Sanchez, Sergio Orts-Escolano, Jose Garcia-Rodriguez and Miguel Cazorla
University of Alicante, Spain

3:30PM A short review of deep learning methods for understanding group and crowd activities [#18837]
Luis Felipe Borja-Borja, Marcelo Saval-Calvo and Jorge Azorin-Lopez
Universidad Central del Ecuador, Ecuador; Universidad de Alicante, Spain

3:50PM Identifying subtype specific network-biomarkers of breast cancer survivability [#18119]
Sheikh Jubair, Luis Rueda and Alioune Ngom
University of Windsor, Canada

Session WT5: Workshop on Computational Energy Management in Smart Grids
Thursday, July 12, 2:10PM-4:10PM, Room: Aruba, Chair: Stefano Squartini and Derong Liu

2:10PM Energy Transduction Optimization of a Wave Energy Converter by Evolutionary Algorithms [#18816]
Antonino Capillo, Massimiliano Luzi, Maurizio Paschero, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

2:30PM A Supervised Classification System based on Evolutive Multi-Agent Clustering for Smart Grids Faults Prediction [#18877]
Mauro Giampieri, Enrico De Santis, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

2:50PM Collaborative Energy Management in Micro-Grid environments through multi-objective optimization [#18476]
Marco Severini, Ornella Pisacane, Marco Fagiani and Stefano Squartini
Universita Politecnica delle Marche, Italy

3:10PM Evolutionary Optimization of an Affine Model for Vulnerability Characterization in Smart Grids [#18078]
Enrico De Santis, Maurizio Paschero, Antonello Rizzi and Fabio Massimo Frattale Mascioli

University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy, Italy

3:30PM Differential Evolution Application in Portfolio Optimization for Electricity Markets [#18330]
Ricardo Faia, Fernando Lezama, Tiago Pinto, Joao Soares, Zita Vale and Juan Corchado
GECAD, Polytechnic of Porto, Portugal; BISITE, USAL, Spain

3:50PM Day ahead electricity consumption forecasting with MOGUL learning model [#18332]
Aria Jozi, Tiago Pinto, Isabel Praca, Zita Vale and Joao Soares
GECAD, Polytechnic of Porto, Portugal; BISITE, University of Salamanca, Spain

Plenary Poster Session POS4: Poster Session 4
Thursday, July 12, 4:10PM-6:30PM, Room: Europa II , Chair: Leandro Minku

P701 Hybrid K-Means and Improved Group Search Optimization Methods for Data Clustering [#28005]
Luciano Pacifico and Teresa Ludermir
UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO, Brazil; Universidade Federal de Pernambuco, Brazil

P702 Effort estimation via text classification and autoencoders [#18830]
Rodrigo G. F. Soares
Federal Rural University of Pernambuco, Brazil

P703 Medical Image Segmentation Using Seeded Fuzzy C-means: A Semi-supervised Clustering Algorithm [#18853]
Luis Santos, Rodrigo Veras, Kelson Aires, Laurindo Britto and Vinicius Machado
Federal University of Piaui, Brazil

P704 Computational Analysis of Learned Representations in Deep Neural Network Classifiers [#18889]
Tomas Kuzma and Igor Farkas
Comenius University in Bratislava, Slovakia

P705 Cluster Structure Preserving Based on Dictionary Pair for Unsupervised Feature Selection [#18961]
Qilai Zhang and Jianhua Dai
Tianjin University, China; Hunan Normal University, China

P706 Measuring Semantic Similarity Between Sentences Using Siamese Neural Network [#18968]
Alexandre Ichida, Felipe Meneguzzi and Duncan Ruiz
PUCRS, Brazil

P707 Using Multi-objective Algorithms for Optimizing Support Vector Regression Parameters [#18982]
Manoel Alves de Almeida Neto, Roberta Andrade de Araujo Fagundes and Carmelo Jose Albanez Bastos Filho
University of Pernambuco, Brazil

P708 ACJIS: A Novel Attentive Cross Approach For Joint Intent Detection And Slot Filling [#18989]
Shuai Yu, Lei Shen, Pengcheng Zhu and Jiansong Chen
SIAT, Chinese Academy of Sciences, China; Rokid A-Lab, China; Tsinghua University, China

P709 Meta-Learning Related Tasks with Recurrent Networks: Optimization and Generalization [#19015]
Thy Nguyen, A. Steven Younger, Emmett Redd and Tayo Obafemi-Ajayi
Missouri State University, United States

P710 Remaining Useful Life Estimation of Hard Disk Drives based on Deep Neural Networks [#19020]
Fernando Lima, Francisco Pereira, Lucas Leite, Joao Gomes and Javam Machado
Federal University of Ceara, Brazil

P711 Improving Person Re-identification by Body Parts Segmentation Generated by GAN [#19023]

Guoping Zhao, Jiacheng Jiang, Jiajun Liu, Yanlei Yu and Ji-Rong Wen
School of Information, Renmin University of China, China

P712 Encoding symbolic sequences with spiking neural reservoirs [#19024]
Renato Duarte, Marvin Uhlmann, Dick van den Broek, Hartmut Fitz, Karl Petersson and Abigail Morrison
Forchungszentrum Juelich, Germany; Max Planck Institute for Psycholinguistics, Netherlands

P713 Similarity-based Multi-label Learning [#19025]
Ryan Rossi, Nesreen Ahmed, Hoda Eldardiry and Zhou Rong
Adobe Research, United States; Intel Labs, United States; Palo Alto Research Center, United States; Google, United States

P714 Students' Learning Behaviors Recognition based on a Single Image in Classroom Scenes [#19027]
Xiang Li, Chengcheng Zhou and Kehua Su
School of Computer Science of Wuhan University, China

P715 Temporal Link Prediction Using Cluster and Temporal Information Based Motif Feature [#19030]
Yi Li, Yanlong Wen, Peng Nie and Xiaojie Yuan
Nankai University, China

P716 Deep Modeling of Human Age Guesses for Apparent Age Estimation [#19065]
Jared Rondeau and Marco Alvarez
University of Rhode Island, United States

P717 A Deep Neural Network Model for Target-based Sentiment Analysis [#19069]
Chen Siyuan, Peng Chao, Cai Linsen and Guo Lanying
East China Normal University, China

P718 An Adaptive Recurrent Neural Network Model Dedicated to Opportunistic Communication in Wireless Networks [#19070]
Silas Fernandes, Mariana Makiuchi, Marcus Lamar and Bordim Jacir
University of Brasilia, Brazil

P719 Unsupervised Pre-training on Improving the Performance of Neural Network in Regression [#19081]
Pallabi Saikia, Prateek Vij and Rashmi Dutta Baruah
Research Scholar, Computer science and Engg. deptt, IIT Guwahati, India; B. Tech, Computer science and Engg. deptt, IIT Guwahati, India; Asst. Professor, IIT Guwahati, India

P720 Improving Speech Separation with Adversarial Network and Reinforcement Learning [#19083]
Guangcan Liu, Jing Shi, Xiuyi Chen, Jiaming Xu and Bo Xu
CASIA, China

P721 Water Quality Prediction Based on Wavelet Neural Networks and Remote Sensing [#19092]
Hieda Adriana Nascimento Silva, Antonello Rosato, Rosa Altilio and Massimo Panella
University of Rome "La Sapienza", Italy

P722 Motor Imagery Classification Using TSK Fuzzy Inference Neural Networks [#19099]
Rory Donovan and Xiao-Hua Yu
California Polytechnic State University, San Luis Obispo, United States

P723 Inverted Cone Convolutional Neural Network for Deboning MRIs [#19109]
Oliver Palumbo, Dimah Dera, Nidhal Bouaynaya and Hassan Fathallah-Shaykh
Rowan University, United States; University of Alabama at Birmingham, United States

P724 Validation of ANN Training Approaches for Day-Ahead Photovoltaic Forecasts [#19118]
Alfredo Nespoli, Emanuele Ogliari, Alberto Dolara, Francesco Grimaccia, Sonia Leva and Marco Mussetta
Politecnico di Milano, Italy

P725 Evaluating the Dynamicity of Feature and Individual Classifiers Selection in Ensembles of Classifiers [#19136]

Carine Dantas, Romulo Nunes, Anne Canuto and Joao Xavier-Junior
Federal University of Rio Grande do Norte, Brazil

P726 Reducing Squeezenet Storage Size with Depthwise Separable Convolutions [#28033]

Aline Gondim Santos, Camila Oliveira de Souza, Cleber Zanchettin, David Macedo, Adriano L. I. Oliveira and Teresa Ludermir
Universidade Federal de Pernambuco, Brazil

P727 Using Meta-learning in the Selection of the Combination Method of a Classifier Ensemble [#28038]

Robercy Silva, Joao Xavier-Junior, Teresa Ludermir and Anne Canuto
Federal University of Rio Grande do Norte, Brazil; Federal University of Pernambuco, Brazil

P728 Correntropy Based Hierarchical Linear Dynamical System For Speech Recognition [#28041]

Rishabh Singh and Jose Principe
University of Florida, United States

P729 Interpretative Topic Categorization via Deep Multiple Instance Learning [#18399]

Yu Tong, Wang Meng, Lv Yanzhang, Xue Luguo and Liu Jun
Xi'an Jiaotong University, China

P730 Plant Classification Using Artificial Neural Networks [#18042]

Luciano Pacifico, Valmir Macario and Joao Oliveira
UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO, Brazil; UNIVERSIDADE DE PERNAMBUCO, Brazil

P731 Towards a One-stop Solution to Both Aspect Extraction and Sentiment Analysis Tasks with Neural Multi-task Learning [#19093]

Wang Feixiang, Lan Man and Wang Wenting
East China Nomal University, China; Alibaba Group, China

P732 Classify Sentence from Multiple Perspectives with Category Expert Attention Network [#18105]

Shiyun Chen, Maoquan Wang, Jiacheng Zhang and Liang He
East China Normal University, China

P733 Loss Rank Mining: A General Hard Example Mining Method for Real-time Detectors [#18178]

Hao Yu, Zhaoning Zhang, Zheng Qin, Hao Wu, Dongsheng Li, Jun Zhao and Xicheng Lu
National University of Defense Technology, China

P734 Robust 2D Joint Sparse Principle Component Analysis with F-norm Minimization for Sparse Modelling: 2D-RJSPCA [#18940]

Imran Razzak, Raghib Abu Saris, Guandong Xu and Michael Blumenstein
UTS, Australia; KSAU, Saudi Arabia

P735 Kernelized Convex Hull Approximation and its Applications in Data Description Tasks [#18097]

Chengqiang Huang, Yulei Wu, Geyong Min and Yiming Ying
University of Exeter, United Kingdom; State University of New York at Albany, United States

P736 DeepTransport: Learning Spatial-Temporal Dependency for Traffic Condition Forecasting [#18177]

Xingyi Cheng, Ruiqing Zhang, Zhou Jie and Xu Wei
Baidu Research, China; Baidu Research, United States

P737 Variational Inference based Kernel Dynamic Bayesian Networks for Prediction Intervals for Industrial Time Series with Incomplete Input [#18185]

Long Chen, Zhongyang Han, Jun Zhao, Wei Wang and Chunyang Sheng
Dalian University of Technology, China; Shandong University of Science and Technology, China

P738 Designing Financial Strategies based on Artificial Neural Networks Ensembles for Stock Markets [#19119]

Julia Assis, Adriano Pereira and Rodrigo Couto e Silva

CEFET-MG, Brazil; UFMG, Brazil

P739 Hard Disk Drive Failure Prediction Method based on a Bayesian Network [#18829]

Iago Chaves, Manoel de Paula, Lucas Leite, Joao Gomes and Javam Machado

Universidade Federal do Ceara, Brazil

P740 PruNet: Class-Blind Pruning Method for Deep Neural Networks [#18932]

Alberto Marchisio, Muhammad Abdullah Hanif, Maurizio Martina and Muhammad Shafique

Vienna University of Technology, Polytechnic University of Turin, Austria; Vienna University of Technology, Austria; Polytechnic University of Turin, Italy

P741 McDiarmid Drift Detection Methods for Evolving Data Streams [#18150]

Ali Pesaranghader, Herna Viktor and Eric Paquet

University of Ottawa, Canada; National Research Council of Canada, Canada

P742 GAN2C: Information Completion GAN with Dual Consistency Constraints [#18574]

Lujuan Zhang, Jun Li, Tao Huang, Zhenyuan Ma, Zhiyong Lin, Shaopeng Liu and Mukesh Prasad

Guangdong Polytechnic Normal University, China; University of Technology Sydney, Australia

P743 Utilizing Information from Task-Independent Aspects via GAN-Assisted Knowledge Transfer [#18977]

Lunkai Fu, Jun Li, Langxiong Zhou, Zhenyuan Ma, Shaopeng Liu, Zhiyong Lin and Mukesh Prasad

Guangdong Polytechnic Normal University, China; University of Technology Sydney, Australia

P744 Finding Answers from the Word of God: Domain Adaptation for Neural Networks in Biblical Question Answering [#18249]

Helen Jiahe Zhao and Jiamou Liu

The University of Auckland, New Zealand

P745 Analysis of Gene Expression time Series Data of Ebola Vaccine response using the NeuCube and temporal feature selection [#28020]

Lucien Koefoed, Elisa Capecci and Nikola Kasabov

Knowledge Engineering and Discovery Research Institute, Auckland University of Technology,, New Zealand

P746 Monotonicity Induced Parameter Learning for Bayesian Networks with Limited Data [#18692]

Jingzhuo Yang, Yu Wang, Shenglei Pei and Qinghua Hu

Tianjin University, China

P747 FraudNE: a Joint Embedding Approach for Fraud Detection [#18636]

Mengyu Zheng, Chuan Zhou, Jia Wu, Shirui Pan, Jinqiao Shi and Li Guo

Institute of Information Engineering, Chinese Academy of Sciences, China; Department of Computing, Faculty of Science and Engineering, Macquarie University, Australia; Centre for Artificial Intelligence, University of Technology Sydney, Australia

P748 A Drift Detection Method Based on Active Learning [#18945]

Costa Albert, Albuquerque Regis and dos Santos Eulanda

Federal Institute of Amazonas - IFAM, Brazil; Institute Computing - ICOMP Federal University of Amazonas, Brazil

P749 Asynchronous Bundle Method for Large Scale Regularized Risk Minimization [#18935]

Menglong Lu, Dawei Feng, Linbo Qiao, Dawen Ding and Dongsheng Li

Science and Technology on Parallel and Distributed Laboratory, National University of Defense Technology, Changsha, China, China; College of Computer, National University of Defense Technology, Changsha, China, China; CMC AS2 South CSC, Asiainfo, Nanchang, China, China

P750 End-to-End Supervised Lung Lobe Segmentation [#18202]
Filipe T. Ferreira, Patrick Sousa, Adrian Galdran, Marta R. Sousa and Aurelio Campilho
INESC TEC Porto, Portugal; Centro Hospitalar de Entre o Douro e Vouga, E.P.E, Portugal; Faculdade de Engenharia da Universidade do Porto, Portugal

Session CDSS-03: Special Session The Role of Computational Intelligence Technologies in Controlling Borders
Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 4, Chair: Keeley Crockett, Rodoula Makri and George Boultadakis

4:30PM Legal, ethical and social impact on the use of computational intelligence based systems [#18346]
Tina Kruegel, Benjamin Schuetze and Jonathan Stoklas
Leibniz Universitaet Hannover, Germany

4:50PM Facial Recognition Application for Border Control [#18431]
Laura Rodriguez Carlos Roca, Isabelle Hupont Torres and Carles Fernandez Tena
everis Aerospace and Defense, Spain; Herta Security, Spain

5:10PM Intelligent Deception Detection through Machine Based Interviewing [#18480]
James O'Shea, Keeley Crockett, Wasiq Khan, Philippos Kindynis, Athos Antoniades and Georgios Boultadakis
Manchester Metropolitan University, United Kingdom; Stremble Ventures Ltd, Cyprus; European Dynamics, Belgium

5:30PM A hybrid model combining neural networks and decision tree for comprehension detection [#18505]
James O'Shea, Keeley Crockett, Wasiq Khan and Zuhair Bandar
Manchester Metropolitan University, United Kingdom; Silent Talker Ltd, United Kingdom

Session CDSS22-2: Special Session on Blockchain Research and Applications
Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 5, Chair: Alex Lipton, Nicolas Courtois, Jon Matonis, Nikola Kasabov, Antoaneta Serguieva

4:30PM Commercial Property Tokenizing With Smart Contracts [#18543]
Alex Norta, Chad Fernandez and Stefan Hickmott
Large-Scale-Systems Group Tallinn University of Technology, 19086, Tallinn, Estonia, Estonia; Blockgemini, Dubai UAE, United Arab Emirates; Evarei and Evareium, Downtown Dubai, UAE, United Arab Emirates

4:50PM Naviaddress: Universal Identification and Addressing Platform [#18850]
Mikhail Gamzin, Mikhail Zelenin and Rostislav Yavorskiy
Naviworld LLC, Cyprus; Higher School of Economics, Moscow, Russian Federation

5:10PM The Evolution of Embedding Metadata in Blockchain Transactions [#18910]
Faisal Tooba, Nicolas Courtois and Antoaneta Serguieva
University College London, United Kingdom; nChain, LSE Systemic Risk, United Kingdom

5:30PM Promoting Cooperative Strategies on Proof-of-Work Blockchain [#19082]
Seunghyun Yoo, Seungbae Kim, Joshua Joy and Mario Gerla
University of California, Los Angeles, United States

5:50PM A Network-Based High Level Data Classification Technique [#18129]
Tiago Colliri, Donghong Ji, Heng Pan and Liang Zhao
ICMC-USP, Brazil; Wuhan University, China; Zhongyuan University of Technology, China; FFCLRP-USP, Brazil

Session 8v: Applications
Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 6, Chair: Valmiro Ribeiro da Silva and Benjamin Donnot

4:30PM Goal Recognition in Latent Space [#18783]
Leonardo Amado, Ramon Pereira, Joao Paulo Aires, Mauricio Magnaguagno, Roger Leitzke and Felipe Meneguzzi
PUCRS, Brazil

4:50PM Robust Supervised Sparse Coding for Non-Intrusive Load Monitoring [#18313]
Megha Gupta and Angshul Majumdar
IIITD, India

5:10PM AI Intelligence for the Grid 16 Years Later: Progress, Challenges and Lessons for Other Sectors [#18345]
Paul J. Werbos
IntControl LLC, United States

5:30PM Anticipating contingengies in power grids using fast neural net screening [#18818]
Benjamin Donnot, Isabelle Guyon, Antoine Marot and Patrick Panciatici
INRIA, France; UPSud, INRIA Universite Paris Saclay, France; RTE France, France

5:50PM Topic recommendation using Doc2Vec [#18287]
Petros Karvelis, Dimitris Gavrilis, George Georgoulas and Chrysostomos Stylios
Laboratory of Knowledge and Intelligent Computing Department of Computer Engineering, Technological Educational Institute of Epirus Arta, Greece, Greece; Department of Electrical Engineering and Computer Technology, University of Patras, Patras, Greece, Greece; Control Engineering Group Department of Computer Science, Electrical and Space Engineering Lulea University of Technology, Lulea, Sweden, Greece

6:10PM An empirical biometric-based study for user identification with different neural networks in the online game League of Legends [#18283]
Valmiro Ribeiro da Silva and Marjory Da Costa-Abreu
UFRN, Brazil

Session SS20: Special Session on Neurocomputation and Cognition
Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 7, Chair: Larry Manevitz, Bernardete Ribeiro and Alex Frid

4:30PM Overview of Deep Learning Architectures for EEG-based Brain Imaging [#18081]
Lachezar Bozhkov and Petia Georgieva
Technical University of Sofia, Bulgaria; University of Aveiro, Portugal

4:50PM A General Purpose Machine-Learning Tool for Real-Time fMRI Whole-Brain Pattern Classification [#18507]
Ori Cohen, Rafael Malach, Moshe Koppel and Doron Friedman
Department of Computer Science, Bar-Ilan University and Advanced Reality Lab, the Interdisciplinary Center Herzliya, Israel; Department of Neurobiology, Weizmann Institute of Science, Israel; Department of Computer Science, Bar-Ilan University, Israel; Advanced Reality Lab, The Interdisciplinary Center Herzliya, Israel

5:10PM Non-Invasive Motion Analysis for Stroke Rehabilitation using off the Shelf 3D Sensors [#18821]
Nadav Eichler, Hagit Hel-Or, Ilan Shimshoni, Dorit Itah, Bella Gross and Shmuel Raz
Department of Computer Science, Haifa University, Israel; Department of Information Systems, Haifa University, Israel; Occupational Therapy Unit, Galilee Medical Center, Israel; Galilee Medical Center. Azrieli school of Medicine, Bar Ilan University, Israel

5:30PM STDP Learning of Image Features with Spiking Neural Networks [#19047]
Daniel Saunders, Hava Siegelmann, Robert Kozma and Mikl\'{o}s Ruszink\'{o}
University of Massachusetts Amherst, United States; Alfr\'{e}d R\'{e}nyi Institute of Mathematics, Hungary

5:50PM Decoding music-induced experienced emotions using functional magnetic resonance imaging - Preliminary results [#18396]
Norberto Eiji Nawa, Daniel E. Callan, Parham Mokhtari, Hiroshi Ando and John Iversen
National Institute and Information and Communications Technology, Japan; UCSD, United States

6:10PM Data-driven spectral decomposition of ECoG signal from an auditory oddball experiment in a marmoset monkey: Implications for EEG data in humans [#19013]
Natasza Marrouch, Heather Read, Joanna Slawinska and Dimitrios Giannakis
Dept. of Psychological Sciences, University of Connecticut, United States; Department of Physics,University of Wisconsin-Milwaukee, United States; Courant Institute of Mathematical Sciences, NYU, United States

6:30PM Perceiving Abstract Concepts Via Evolving Computational Cognitive Modeling [#18190]
Rahul Sharma, Ribeiro Bernardete, Alexandre Miguel Pinto and Amilcar F. Cardoso
CISUC, University of Coimbra, Portugal

Session 8vpst: Other applications
Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 8, Chair: Rafael Saraiva Campos and Gonzalo Safont

4:30PM Person Identification based on Smartphones Inertial Sensors [#18260]
Rafael Saraiva Campos and Lisandro Lovisolo
Centro Federal de Educacao Tecnologica Celso Suckow da Fonseca (CEFET/RJ), Brazil; Universidade do Estado do Rio de Janeiro (UERJ), Brazil

4:50PM Cognitive Analysis for Reading and Writing of Bengali Conjuncts [#18907]
Chandranath Adak, Bidyut B. Chaudhuri and Michael Blumenstein
School of Software, University of Technology Sydney, Australia; CVPR Unit, Indian Statistical Institute, India

5:10PM A Neural System for Faithful Color Reproduction in Industrial Printing Processes [#18925]
Beatrice Lazzerini and Francesco Pistolesi
Department of Information Engineering, Italy

5:30PM N2Sky - A Neural Network Problem Solving Environment Fostering Virtual Resources [#18647]
Andrii Fedorenko, Aliaksandr Adamenko and Erich Schikuta
University of Vienna, Austria

5:50PM Mid-Curve Recommendation System: a Stacking Approach Through Neural Networks [#18533]
Adriano Koshiyama, Nick Firoozye and Philip Treleaven
University College London, United Kingdom

6:10PM Semi-supervised Learning for Imbalanced Classification of Credit Card Transactions [#18757]
Addisson Salazar, Gonzalo Safont and Luis Vergara
Universitat Politecnica de Valencia, Spain

Session SS5: Data Driven Approach for Bio-medical and Healthcare
Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 9, Chair: Paul J Kennedy and Mukesh Prasad and Alexei Manso Correa Machado

4:30PM Study of clinical staging and classification of retinal images for Retinopathy of Prematurity (ROP) screening [#18445]

Deepthi Badarinath, Chaitra Siddu, Neha Bharill, Tanveer M., Mukesh Prasad, Abhishek Appaji, Suma Vinekar and Anand Ningappa

B M S College of Engineering, India; Indian Institute of Information Technology Dharwad, India; Indian Institute of Technology, Indore, India; University of Technology Sydney, Australia; Narayana Nethralaya Postgraduate Institute of Ophthalmology, India

4:50PM Extracting Lungs from CT Images using Fully Convolutional Networks [#18697]

Jeovane Alves, Pedro Moreira Neto and Lucas Oliveira

Federal University of Parana, Brazil

5:10PM Nonlinear Brain Tumor Model Estimation with Long Short-Term Memory Neural Networks [#18900]

Jiashu Guo, Zhengzhong Liang, Elizabeth Scribner, Gregory Ditzler, Nidhal Bouaynaya and Hassan Fathallah-Shaykh

The University of Arizona, United States; University of Alabama at Birmingham, United States; Rowan University, United States

5:30PM A system for exploring big data: an iterative k-means searchlight for outlier detection on open health data [#18585]

A. Ravishankar Rao, Daniel Clarke, Subrata Garai and Soumyabrata Dey

Fairleigh Dickinson University, United States; IT Software Engineer, Canada; Machine Learning Researcher, United States

5:50PM A comparison of models to predict medical procedure costs from open public healthcare data [#18905]

A. Ravishankar Rao and Daniel Clarke

Fairleigh Dickinson University, United States

6:10PM Predicting Drug Targets from Heterogeneous Spaces using Anchor Graph Hashing and Ensemble Learning [#18256]

Yi Zheng, Hui Peng, Xiaocai Zhang, Xiaoying Gao and Jinyan Li

University of Technology Sydney, Australia; Victoria University of Wellington, New Zealand

6:30PM Single Channel Continuous Wave Doppler Radar for Differentiating Types of Human Activity [#18289]

Julio J. Valdes, Zachary Baird, Sreeraman Rajan and Miodrag Bolic

National Research Council Canada, Canada; Carleton University, Canada; University of Ottawa, Canada

Session 3 : Neurodynamics

Thursday, July 12, 4:30PM-6:30PM, Room: Oceania 10, Chair: Jefferson Oliva and Jibin Wu

4:30PM A novel hardware-efficient spiking neuron model based on asynchronous cellular automaton dynamics exhibiting various nonlinear response curves [#18589]

Takeda Kentaro and Torikai Hiroyuki

Kyoto Sangyo University, Japan; Hosei University, Japan

4:50PM Evaluating the Training Performance of Artificial Neural Network Using Small Time Series Segments of The Lorenz Chaotic System [#18414]

Lei Zhang

University of Regina, Canada

5:10PM Graph Models of Neurodynamics to Support Oscillatory Associative Memories [#18597]

Gabriel Andrade, Miklos Ruszinko and Robert Kozma

Univ Massachusetts Amherst, United States; Renyi Institute, Hungarian Academy of Sciences,

Hungary

5:30PM Differentiation between Normal and Interictal EEG Using Multitaper Spectral Classifiers [#18059]
Jefferson Oliva and Joao Rosa
University of Sao Paulo, Brazil

5:50PM A Biologically Plausible Speech Recognition Framework Based on Spiking Neural Networks [#18734]
Jibin Wu, Yansong Chua and Haizhou Li
National University of Singapore, Singapore; Institute for Infocomm Research, A*STAR, Singapore

Session WT5-2: Workshop on Computational Energy Management in Smart Grids
Thursday, July 12, 4:30PM-6:30PM, Room: Aruba, Chair: TBD

4:30PM A Binary PSO Approach for Real Time Optimal Balancing of Electrochemical Cells [#18189]
Massimiliano Luzi, Maurizio Paschero, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

4:50PM Microgrid Energy Management by ANFIS Supported by an ESN Based Prediction Algorithm [#18205]
Stefano Leonori, Antonello Rizzi, Maurizio Paschero and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

5:10PM Exploiting the Reactive Power in Deep Neural Models for Non-Intrusive Load Monitoring [#18683]
Michele Valenti, Roberto Bonfigli, Emanuele Principi and Stefano Squartini
Universita' Politecnica delle Marche, Italy

Session 8g: Robotics
Friday, July 13, 8:00AM-10:00AM, Room: Oceania 4, Chair: Diego O. Dantas and Francisco Cruz

8:00AM An Assist-as-Needed Controller for Robotic Rehabilitation Therapy Based on RBF Network [#18140]
Lincong Luo, Liang Peng, Chen Wang, Zengguang Hou and Weiqun Wang
Institute of Automation, Chinese Academy of Sciences, China, China

8:20AM Handling Pedestrians in Crosswalks Using Deep Neural Networks in the IARA Autonomous Car [#18231]
Ranik Guidolini, Lucas G. Scart, Luan F. R. Jesus, Vinicius B. Cardoso, Claudine Badue, Thiago Oliveira-Santos and Alberto F. De Souza
Universidade Federal do Espirito Santo - UFES, Brazil

8:40AM Multi-modal Feedback for Affordance-driven Interactive Reinforcement Learning [#18235]
Francisco Cruz, German I. Parisi and Stefan Wermter
Universidad Central de Chile, Chile; University of Hamburg, Germany

9:00AM Incremental Semantic Mapping with Unsupervised On-line Learning [#18537]
Ygor Sousa and Hansenclever Bassani
Federal University of Pernambuco, Brazil

9:20AM Learning Stable Movement Primitives by Finding a Suitable Fuzzy Lyapunov Function from Kinesthetic Demonstrations [#18956]
Samrat Dutta, Swagat Kumar and Laxmidhar Behera

Indian Institute of Technology Kanpur, India; TCS Innovation Labs, India

9:40AM Design of Automated Construction System for Modular Structures based on Parameterized Learning Automata [#18987]
Diego O. Dantas, Sergio R. Barros dos Santos, Fabio A. M. Cappabianco and Areolino de Almeida Neto
Federal University of Maranhao, Brazil; Federal University of Sao Paulo, Brazil

Session 8l-1: Temporal data analysis, prediction, and forecasting; time series analysis
Friday, July 13, 8:00AM-10:00AM, Room: Oceania 5, Chair: Leandro Anghinoni and Nicolas Cruz

8:00AM TA4REC: Recurrent Neural Networks with Time Attention Factors for Session-based Recommendations [#18103]
Yu Sun, Peize Zhao and Honggang Zhang
Beijing University of Posts and Telecommunications, China

8:20AM Time Series Trend Detection and Forecasting Using Complex Network Topology Analysis [#18107]
Leandro Anghinoni, Liang Zhao, QiuSheng Zheng and JunBo Zhang
University of Sao Paulo, Brazil; Zhongyuan University of Technology, China

8:40AM Forecasting QoS Attributes Using LSTM Networks [#18132]
Gary White, Andrei Palade and Siobhan Clarke
Trinity College Dublin, Ireland

9:00AM Partial Adversarial Training for Prediction Interval [#18169]
H M Dipu Kabir, Abbas Khosravi, Anwar Hosen and Saeid Nahavandi
Deakin University, Australia

9:20AM Weightless Neural Network for High Frequency Trading [#18217]
Samara Alves, Wouter Caarls and Priscila Lima
Federal University of Rio de Janeiro, Brazil; Pontifical Catholic University of Rio de Janeiro, Brazil

9:40AM Neural Network Prediction Interval Based on Joint Supervision [#18288]
Nicolas Cruz, Luis G. Marin and Doris Saez
University of Chile, Chile

Session CDSS23-2: Special Session on Computational Intelligence
Friday, July 13, 8:00AM-10:00AM, Room: Oceania 6, Chair: Jim Torresen and Yi Lu Murphey

8:00AM Deep Learning for Real-time Human Activity Recognition with Mobile Phones [#18554]
Mark Nutter, Catherine Crawford and Jorge Ortiz
ARM Research, United States; IBM Research AI, United States

8:20AM Sensor-based Vital Sign Monitoring, Analysis and Visualisation for Ageing in Place [#18870]
Emmett Kerr, Sonya Coleman, Dermot Kerr, Philip Vance, Bryan Gardiner, T.M. McGinnity, Yunzhou Zhang, Wang Fei and Chengdong Wu
Ulster University, Northern Ireland; Northeastern University, China

8:40AM Machine Learning Models for Road Surface and Friction Estimation using Front-Camera Images [#18096]
Sohini Roychowdhury, Minming Zhao, Andreas Wallin, Niklas Ohlsson and Mats Jonasson
Volvocars Technology USA, University of Washington, Bothell, United States; Volvocars Technology USA, United States; Vehicle Motion and Control, Volvo Cars, Sweden

9:00AM Visual Global Localization with a Hybrid WNN-CNN Approach [#18937]
Avelino Forechi, Thiago Oliveira-Santos, Claudine Badue and Alberto F. De Souza

Instituto Federal do Espirito Santo, Brazil; Universidade Federal do Espirito Santo, Brazil

9:20AM Heading Direction Estimation Using Deep Learning with Automatic Large-scale Data Acquisition [#19039]

Rodrigo F. Berriel, Lucas Tabelini Torres, Vinicius B. Cardoso, Ranik Guidolini, Claudine Badue, Alberto F. De Souza and Thiago Oliveira-Santos

Universidade Federal do Espirito Santo (UFES), Brazil

Session 8mnoq: Applications

Friday, July 13, 8:00AM-10:00AM, Room: Oceania 7, Chair: Abraham Brendan and Vinicius Mello

8:00AM A Comparison of Machine Learning Approaches to Detect Botnet Traffic [#18996]

Abraham Brendan, Abhijith Mandya, Rohan Bapat, Fatma Alali, Don Brown and Malathi Veeraraghavan

University of Virginia, United States

8:20AM Grid-Based RFID Indoor Localization Using Tag Read Count and Received Signal Strength Measurements [#19123]

Nanda Gopal Jeevarathnam and Ismail Uysal

Student, University of South Florida, United States; Assistant Professor, University of South Florida, United States

8:40AM XGBOD: Improving Supervised Outlier Detection with Unsupervised Representation Learning [#18927]

Yue Zhao and Maciej Hryniewicki

University of Toronto, Canada; PricewaterhouseCoopers, Canada

9:00AM Controlling the Charging of Electric Vehicles with Neural Networks [#18997]

Martin Pilat

Charles University, Faculty of Mathematics and Physics, Czech Republic

9:20AM Comparison of Three Methods for Short Term Wind Power Forecasting [#19142]

Qin Chen and Komla Agbenyo Folly

University of Cape Town, South Africa; university of Cape Town, South Africa

9:40AM Novelty Detection in Passive Sonar Systems using Stacked AutoEncoders [#18958]

Vinicius Mello, Natanael Moura and Jose Seixas

Sonar Technology Laboratory - COPPE/UFRJ, Brazil

Session 7: BIO-INSPIRED AND BIOMORPHIC SYSTEMS

Friday, July 13, 8:00AM-10:00AM, Room: Oceania 8, Chair: Jiannan Zhao and Joohee Suh

8:00AM A Bio-inspired Collision Detector for Small Quadcopter [#18114]

Jiannan Zhao, Cheng Hu, Chun Zhang, Zhihua Wang and Shigang Yue

University of Lincoln, United Kingdom; Tsinghua University, China

8:20AM A Self-organizing Method for Robot Navigation based on Learned Place and Head-direction cells [#18763]

Xiaomao Zhou, Cornelius Weber and Stefan Wermter

Harbin Engineering University, China; University of Hamburg, Germany

8:40AM CS-CL: A Flocking Model That Incorporates The Bio-inspired Chorus-Line Effect [#18404]

Jing Ma, Edmund M-K Lai and WenWang Pang

Auckland University of Technology, New Zealand

9:00AM The Context-Aware Learning Model: experience-powered Logistic Regression Backpropagation (CALM-epLRB) [#18796]

Joohee Suh and Dean Hougen

University of Oklahoma, United States

9:20AM The Context-Aware Learning Model: neuro-experience-powered Logistic Regression Backpropagation (CALM-nepLRB) [#18838]
Joohee Suh and Dean Hougen
University of Oklahoma, United States

9:40AM Improving Hierarchical Classification of Transposable Elements using Deep Neural Networks [#18477]
Felipe Kenji Nakano, Saulo Mastelini, Sylvio Barbon Jr. and Ricardo Cerri
Federal University of Sao Carlos, Brazil; State University of Londrina, Brazil

Session 5-1: Neural Models of Perception, Cognition and Action
Friday, July 13, 8:00AM-10:00AM, Room: Oceania 9, Chair: Pablo Barros and Hirak Kashyap

8:00AM Expectation Learning and Crossmodal Modulation with a Deep Adversarial Network [#18176]
Pablo Barros, German I. Parisi, Di Fu, Xun Liu and Stefan Wermter
University of Hamburg, Germany; CAS Key Laboratory of Behavioral Science, Institute of Psychology, China

8:20AM Cyber-Human Approach for Learning Human Intention and Shape Robotic Behavior based on Task Demonstration [#18840]
Vinicius G. Goecks, Gregory Gremillion, Hannah Lehman and William Nothwang
Texas AM University, United States; US Army Research Laboratory, United States

8:40AM Neural Network Modeling of Gist and Verbatim in Business Decision Making [#18357]
Daniel Levine and Kay-Yut Chen
University of Texas at Arlington, United States

9:00AM Mixing Habits and Planning for Multi-Step Target Reaching Using Arbitrated Predictive Actor-Critic [#18565]
Farzaneh S. Fard and Thomas Trappenberg
Faculty of Computer Science at Dalhousie University, Canada

9:20AM Analysis and fusion of 2D and 3D images applied for detection and recognition of traffic signs using a new method of features extraction in conjunction with Deep Learning [#18437]
Diego Renan Bruno, Daniel Oliva Sales, Jean Amaro and Fernando Santos Osorio
USP - University of Sao Paulo / ICMC, Brazil

9:40AM A Recurrent Neural Network Based Model of Predictive Smooth Pursuit Eye Movement in Primates [#18984]
Hirak Kashyap, Georgios Detorakis, Nikil Dutt, Jeffrey Krichmar and Emre Neftci
University of California, Irvine, United States

Session 8e-1: Data analysis and pattern recognition
Friday, July 13, 8:00AM-10:00AM, Room: Oceania 10, Chair: Claudio Perez and Boris Bacic

8:00AM Trademark Image Retrieval Using a Combination of Deep Convolutional Neural Networks [#28050]
Claudio Perez, Pablo Estevez, Francisco Galdames, Daniel Schulz, Juan Perez, Diego Bastias and Daniel Vilar
Department of Electrical Engineering and Advanced Mining Technology Center (AMTC) Universidad de Chile, Chile

8:20AM A 3D vision system for detecting use of mobile phones while driving [#18120]
Rafael Berri and Fernando Osorio
USP - University of Sao Paulo - ICMC LRM - Mobile Robots Lab, Brazil

8:40AM A Computational Approach for Authorship Attribution on Multiple Languages [#18133]
Paulo Varela, Edson Justino, Flavio Bortolozzi and Michel Albonico
Universidade Tecnologica Federal do Parana, UTFPR, Brazil; Pontificia Universidade Catolica do Parana, PUCPR, Brazil

9:00AM Comparing LBP, HOG and Deep Features for Classification of Histopathology Images [#18265]
Taha J. Alhindi, Shivam Kalra, Ka Hin Ng, Anika Afrin and Hamid Tizhoosh
Kimia Lab, Univesity of Waterloo, Canada; Systems Design Engineering, Univesity of Waterloo, Canada; Electrical and Computer Engineering, Univesity of Waterloo, Canada

9:20AM Identifying Bee Species by Means of the Foraging Pattern Using Machine Learning [#18275]
Helder Arruda, Vera Imperatriz-Fonseca, Paulo Souza and Gustavo Pessin
Instituto Tecnologico Vale, Brazil; Commonwealth Sci. Ind. Res. Organ., Australia; Universidade do Vale do Rio dos Sinos, Brazil

9:40AM Towards the next generation of exergames: Flexible and personalised assessment-based identification of tennis swings [#18384]
Boris Bacic
Auckland University of Technology, New Zealand

Session WT2: Workshop 2
Friday, July 13, 8:00AM-10:00AM, Room: Aruba, Chair: TBD

8:00AM GDPR Impact on Computational Intelligence Research [#18424]
Keeley Crockett, Sean Goltz and Matt Garratt
Manchester Metropolitan University, United Kingdom; Edith Cowan University, Australia; University of New South Wales, Australia

Plenary Talk PL5: The plastic brain, Colin Blakemore
Friday, July 13, 1:00PM-2:00PM, Room: ASIA 1, Chair: Jose Principe

Session S13: Special Session on Advanced Machine Learning Methods for Large-scale Complex Data Environment
Friday, July 13, 2:10PM-4:10PM, Room: Oceania 4, Chair: Jia Wu, Bo Du, Michael Sheng, Chengqi Zhang

2:10PM Towards the Learning of Weighted Multilabel Associative Classifiers [#18392]
Chunyang Liu, Ling Chen, Ivor Tsang and Hongzhi Yin
Didi Chuxing, China; University of Technology Sydney, Australia; University of Queensland, Australia

2:30PM Extreme Graph Kernels for Online Learning on a Memory Budget [#18438]
Nicolo' Navarin, Giovanni Da San Martino and Alessandro Sperduti
University of Nottingham, United Kingdom; Hamad Bin Khalifa University, Qatar; University of Padova, Italy

2:50PM User Alignment via Structural Interaction and Propagation [#18650]
Anfeng Cheng, Chun-Yi Liu, Chuan Zhou, Jianlong Tan and Li Guo
Institute of Information Engineering, Chinese Academy of Sciences, China

3:10PM Optical Flow Based Face Hallucination Via Weightedly-Constrained Representation [#19102]
Bi Wu, Zhihua Cai and Xiaobo Liu
School of Computer Science, China University of Geosciences, China; School of Automation, China University of Geosciences, China

3:30PM A Novel Deep Learning Approach: Stacked Evolutionary Auto-encoder [#18440]
Yaoming Cai, Zhihua Cai, Meng Zeng, Xiaobo Liu, Jia Wu and Guangjun Wang
School of Computer Science, China University of Geosciences (Wuhan), China; School of Automation, China University of Geosciences (Wuhan), China; Department of Computing, Macquarie University, Australia

Session CDSS15-1: Special Session on Computational Intelligence for Cognitive Robotics and Smart Grids Security
Friday, July 13, 2:10PM-4:10PM, Room: Oceania 5, Chair: Mariacarla Staffa and Stefano Squartini

2:10PM Coupling Robots Behavior by Introducing Reactive Motivational Orientations [#18223]
Cristobal Nettle, Fabian Rubilar and Maria-Jose Escobar
Department of Electronics, Universidad Tecnica Federico Santa Maria, Chile

2:30PM Electricity fraud detection using committee semi-supervised learning [#18325]
Joaquim Viegas, Nuno Cepeda and Susana Vieira
IDMEC, Instituto Superior Tecnico, Universidade de Lisboa, Portugal; PowerData, Portugal

2:50PM Data-Driven Reinforcement Learning Design for Multi-agent Systems with Unknown Disturbances [#18892]
Xiangnan Zhong and Zhen Ni
University of North Texas, United States; South Dakota State University, United States

3:10PM A Study of Linear Programming and Reinforcement Learning for One-Shot Game in Smart Grid Security [#18896]
Shuva Paul and Zhen Ni
South Dakota State Unviersity, United States

3:30PM Formal and computationa model of Adam Smith's Invisible Hand [#18039]
Tadeusz Szuba
DIKS Dept. UPJP2 Univ., Poland

Session 1l-1: Deep neural networks
Friday, July 13, 2:10PM-4:10PM, Room: Oceania 6, Chair: Sidney Givigi and Tobias Hinz

2:10PM Impulse Response Modeling of Dynamical Systems with Convolutional Neural Networks [#18347]
Jeremias Machado and Sidney Givigi
UNIFEI, Brazil; RMC, Canada

2:30PM Noise Invariant Frame Selection: A Simple Method to Address the Background Noise Problem for Text-independent Speaker Verification [#18651]
Siyang Song, Shuimei Zhang, Bjoern Schuller, Linlin Shen and Michel Valstar
University of Nottingham, United Kingdom; Temple University, United States; Imperial College London, United Kingdom; Shenzhen University, China

2:50PM Exploring Data Augmentation to Improve Music Genre Classification with ConvNets [#19133]
Rafael Aguiar, Yandre Costa and Carlos Silla
Pontifical Catholic University of Parana, Brazil; State University of Maringa, Brazil

3:10PM Sensorimotor in Space and Time: Audition [#18701]
Xiang Wu, Zejia Zheng and Juyang Weng
Nanjing University of Science and Technology, China; Michigan State University, United States

3:30PM Image Generation and Translation with Disentangled Representations [#18488]
Tobias Hinz and Stefan Wermter
University of Hamburg, Germany

Session S12: Special Session on Biologically Inspired Computational Vision
Friday, July 13, 2:10PM-4:10PM, Room: Oceania 7, Chair: Khan M. Iftekharuddin

2:10PM Efficient Learning of Data Distribution using Simultaneous Recurrent Belief Network [#18193]
Mahbubul Alam, Lasitha Vidyaratne and Khan Iftekharuddin
Old Dominion University, United States

2:30PM Investigation into Sub-Receptive Fields of Retinal Ganglion Cells with Natural Images [#18352]
Philip Vance, Gautham Das, Sonya Coleman, Dermot Kerr, Emmett Kerr and Thomas McGinnity
School of Computing, Engineering and Intelligent Systems, University of Ulster, Magee Campus, Londonderry, N. Ireland., United Kingdom; Lincoln Centre for Autonomous Systems, School of Computer Science, University of Lincoln, Lincoln, United Kindom., United Kingdom; School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom., United Kingdom

2:50PM Prediction of Spatial Spectrum in Cognitive Radio using Cellular Simultaneous Recurrent Networks [#18794]
Alexander Glandon, Sharif Ullah, Lasitha Vidyaratne, Mahbubul Alam, Chunsheng Xin and Khan Iftekharuddin
Old Dominion University, United States

3:10PM A model of neurobiologically plausible least-squares learning in visual cortex [#18891]
Samya Bagchi and McDonnell Mark D.
University of South Australia, Australia

Session 5-2: Neural Models of Perception, Cognition and Action
Friday, July 13, 2:10PM-4:10PM, Room: Oceania 9, Chair: Gwenaelle Cunha Sergio and Danilo Mandic

2:10PM Temporal Hierarchies in Sequence to Sequence for Sentence Correction [#18412]
Gwenaelle Cunha Sergio, Dennis Singh Moirangthem and Minho Lee
Kyungpook National University, Korea (South)

2:30PM Crowd Density Estimation Based on a Modified Multicolumn Convolutional Neural Network [#18226]
Wei-Teng Weng and Daw-Tung Lin
National Taipei University, Taiwan

2:50PM Automatic detection of drowsiness using in-ear EEG [#18972]
Takashi Nakamura, Yousef Alqurashi, Mary Morrell and Danilo Mandic
Imperial College London, United Kingdom

3:10PM TD(0)-Replan: An Efficient Model-Free Planning with full Replay [#19137]
Abdulrahman Altahhan
Leeds Beckett University, United Kingdom

3:30PM Adversarial Manipulation of Reinforcement Learning Policies in Autonomous Agents [#18192]
Yonghong Huang and Shih-Han Wang
McAfee LLC, United States; Intel Corporation, United States

3:50PM Neural decoding with SVM and feature selection in a rat active tactile discrimination task [#18963]
Andy Gajadhar, Renan Moioli, Bianca Melo, Kunicki Ana, Peres Andre and Rego Thais
Universidade Federal da Paraiba, Brazil; Santos Dumont Institute, Brazil

Session CDSS-05: Special Session on Computational Intelligence for Bioinformatics and

Computational Biology
Friday, July 13, 2:10PM-4:10PM, Room: Oceania 10, Chair: Antonello Rizzi and Alessandro Giuliani

2:10PM Distance Matrix Pre-Caching and Distributed Computation of Internal Validation Indices in k-medoids Clustering [#18207]
Alessio Martino, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

2:30PM Dissimilarity Space Representations and Automatic Feature Selection for Protein Function Prediction [#18326]
Enrico De Santis, Alessio Martino, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy, Italy

2:50PM Metagenomics-based signature clustering and interactive visualization analysis [#18344]
Vitor Santos, Leandro Correa, Bianchi Meiguins, Guilherme Oliveira and Ronnie Alves
Universidade Federal do Para, Brazil; Instituto Tecnologico Vale, Brazil

3:10PM Supervised Approaches for Protein Function Prediction by Topological Data Analysis [#18811]
Alessio Martino, Antonello Rizzi and Fabio Massimo Frattale Mascioli
University of Rome "La Sapienza" - Department of Information Engineering, Electronics and Telecommunications, Italy

3:30PM Modeling Gene Transcriptional Regulation by Means of Hyperplanes Genetic Clustering [#19007]
Fabrizio Frasca, Matteo Matteucci, Marco Masseroli and Marco Morelli
DEIB - Politecnico di Milano, Italy; Center for Genomic Science - IIT, Italy

3:50PM A Novel Approach to Protein Folding Prediction based on Long Short-Term Memory Networks: A Preliminary Investigation and Analysis [#18084]
Leandro Takeshi Hattori, Cesar Manuel Vargas Benitez, Matheus Gutoski, Nelson Marcelo Romero Aquino and Heitor Silverio Lopes
Federal University of Technology - Parana (UTFPR), Brazil

Session SS35: Evolutionary Computation for Neural Networks
Friday, July 13, 4:30PM-6:30PM, Room: Oceania 4, Chair: Yeh Wei-Chang Yeh and Vera Y.Y. Chung

4:30PM Augmented Reality for Remote Laboratory Improving Educational Learning: Using Elevated Particle Swarm Optimization in Object Tracking Scheme [#18066]
Seid Miad Zandavi and Vera Chung
School of Information Technology, University of Sydney, Australia

4:50PM Extreme Learning Machines for Data Classification Tuning by Improved Bat Algorithm [#18988]
Adis Alihodzic, Eva Tuba, Dana Simian, Viktor Tuba and Milan Tuba
University of Sarajevo, Bosnia and Herzegovina; Singidunum University, Serbia and Montenegro; Lucian Blaga University, Romania

5:10PM Understanding Selection and Diversity for Evolution of Spiking Recurrent Neural Networks [#18942]
Catherine Schuman, Grant Bruer, Aaron Young, Mark Dean and James Plank
Oak Ridge National Laboratory, United States; University of Tennessee, United States

5:30PM Digital Realization of PSTDP and TSTDP Learning [#18005]
Shaghayegh Gomar and Majid Ahmadi
University of Windsor, Canada

5:50PM Top-down Person Re-identification with Siamese Convolutional Neural Networks [#18063]
Ziyu Liu, Alexander McClung, Henry W. F. Yeung, Yuk Ying Chung and Seid Miad Zandavi
The University of Sydney, Australia; University of Technology, Sydney, Australia

Session SS28: Adversarial machine learning in information security
Friday, July 13, 4:30PM-6:30PM, Room: Oceania 5, Chair: Yun Li and Tao Li

4:30PM Attack Strength vs. Detectability Dilemma in Adversarial Machine Learning [#19101]
Christopher Frederickson, Michael Moore, Glenn Dawson and Robi Polikar
Rowan University, United States

4:50PM Adversarial mRMR against Evasion Attacks [#18489]
Miaomiao Wu and Yun Li
School of Computer Science, Nanjing University of Posts and Telecommunications, China

5:10PM Differential Private Ensemble Feature Selection [#18491]
Zhongfeng Liu, Yun Li and Wei Ji
School of Computer Science, Nanjing University of Posts and Telecommunications, China; School of Telecommunications and Information Engineering, Nanjing University of Posts and Telecommunications, China

5:30PM Adversarials-1: Defending by Attacking [#18656]
Nils Worzyk and Oliver Kramer
University of Oldenburg, Germany

5:50PM A Machine Learning Approach to Malicious JavaScript Detection using Fixed Length Vector Representation [#19034]
Samuel Ndichu, Ozawa Seiichi, Misu Takeshi and Okada Kouichirou
Kobe University, Japan; SecureBrain Co., Japan

6:10PM RNN Encoder-Decoder for the inference of regular human mobility patterns [#18765]
Mehdi Katranji, Laurent Moalic, Guilhem Sanmarty, Sami Kraiem, Alexandre Caminada and Fouad Hadj-Selem
VEDECOM, France; UHA, France; UTBM, France

Session SS21: Deep Reinforcement Learning
Friday, July 13, 4:30PM-6:30PM, Room: Oceania 6, Chair: Qichao Zhang, Dongbin Zhao, Chaomin Luo

4:30PM Visual Navigation with Actor-Critic Deep Reinforcement Learning [#18426]
Kun Shao, Dongbin Zhao, Yuanheng Zhu and Qichao Zhang
Institute of Automation, Chinese Academy of Sciencesstitute of Automation, Chinese Academy of Sciences, China

4:50PM Budgeted Hierarchical Reinforcement Learning [#18479]
Aurelia Leon and Ludovic Denoyer
Sorbonne Universite, France

5:10PM Off-Policy Integral Reinforcement Learning for Semi-Global Constrained Output Regulation of Continuous-Time Linear Systems [#18240]
Yongliang Yang, Xianzhong Chen, Yixin Yin and Donald Wunsch
University of Science and Technology Beijing, China; Missouri University of Science and Technology, United States

5:30PM Model-Free Reinforcement Learning for Fully Cooperative Multi-Agent Graphical Games [#18200]
Qichao Zhang, Dongbin Zhao and Frank Lewis
Institute of Automation, Chinese Academy of Sciences, China; The University of Texas at

Arlington, United States

5:50PM A temporal-based deep learning method for multiple objects detection in autonomous driving [#18397]

Chen Yaran, Zhao Dongbin, Li Haoran, Li Dong and Guo Ping

Chinese Academy of Sciences, China; Beijing Normal University, China

6:10PM Swarm Q-Learning With Knowledge Sharing Within Environments for Formation Control [#18929]

Tung Nguyen, Hung Nguyen, Essam Debie, Kathryn Kasmarik, Matthew Garratt and Hussein Abbass

The University of New South Wales - Canberra, Australia

Session SS22: Ordinal and Monotonic Classification

Friday, July 13, 4:30PM-6:30PM, Room: Oceania 10, Chair: Pedro Antonio Gutierrez and Salvador Garcia

4:30PM Evaluation of oversampling data balancing techniques in the context of ordinal classification [#18159]

Ines Domingues, Jose Amorim, Pedro Abreu, Hugo Duarte and Joao Santos

IPO-Porto Research Centre and CISUC, University of Coimbra, Portugal; CISUC, University of Coimbra, Portugal; IPO-Porto Research Centre, Portugal

4:50PM Ordinal Image Segmentation using Deep Neural Networks [#18506]

Kelwin Fernandes and Jaime Cardoso

INESC TEC, Portugal

5:10PM Post-Processing Methods to Enforce Monotonic Constraints in Ant Colony Classification Algorithms [#18875]

James Brookhouse and Fernando Otero

University of Kent, United Kingdom

5:30PM A mixture of experts model for predicting persistent weather patterns [#18659]

Maria Perez-Ortiz, Pedro A. Gutierrez, Peter Tino, Carlos Casanova-Mateo and Sancho Salcedo-Sanz

University of Cambridge, United Kingdom; University of Cordoba, Spain; University of Birmingham, United Kingdom; Universidad Politecnica de Madrid, Spain; University of Alcala, Spain

5:50PM Mixture of Non-homogeneous Hidden Markov Models for Clustering and Prediction of Water Consumption Time Series [#18880]

Milad Leyli abadi, Allou Same, Latifa Oukhellou, Nicolas Cheifetz, Pierre Mandel, Cedric Feliers and Olivier Chesneau

Ifsttar, France; Veolia, France; Sedif, France

6:10PM Driver Identification: a Time Series Classification Approach [#18206]

Mario Luca Bernardi, Marta Cimitile, Martinelli Fabio and Mercaldo Francesco

Giustino Fortunato, Italy; Unitelma Sapienza, Italy; CNR Pisa, Italy