

# **17<sup>th</sup> IEEE International Conference on Machine Learning and Applications**

**December 17-20, 2018**

**Orlando, Florida USA**



# **AMLA**



## Summary

ICMLA 2018 aims to bring together researchers and practitioners to present their latest achievements and innovations in the area of machine learning (ML).

The conference provides a leading international forum for the dissemination of original research in ML, with emphasis on applications as well as novel algorithms and systems. Following the success of previous ICMLA conferences, the conference aims to attract researchers and application developers from a wide range of ML related areas, and the recent emergence of Big Data processing brings an urgent need for machine learning to address these new challenges. The conference will cover both machine learning theoretical research and its applications. Contributions describing machine learning techniques applied to real-world problems and interdisciplinary research involving machine learning, in fields like medicine, biology, industry, manufacturing, security, education, virtual environments, games, are especially encouraged.

Conference content will be submitted for inclusion into IEEE Xplore as well as other Abstracting and Indexing (A&I) databases.

Main Conference Acceptance Rate

Regular Papers: 31%

Short Papers: 14%

## Challenges

**Organizers:** Shashanka Ubaru, Kristofer E. Bouchard, and Arif Wani.

With the ever growing collection of large volumes of scientific data, development of interpretable machine learning tools to analyze such data is becoming more important. However, robust, interpretable machine learning tools are lacking, threatening extraction of scientific insight and discovery. Dimensionality reduction and low rank approximations/decompositions are popular tools used in many applications to analyze high dimensional data. However, popular dimensionality reduction methods, often yield uninterpretable results, particularly for noisy data.

In this challenge, we focus on parts based feature extraction from noisy data using unsupervised learning. We desire to decompose given noisy data into a small set of interpretable (parts based) features. Such a decomposition will not require any training examples, making it a very important tool for exploratory data analysis, particularly in scientific data applications.

## Organizing Committee

### Conference Co-Chairs

- 1) Mehmed Kantardzic  
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### Special Sessions and Tutorials Chair

- 1) Tegiyot Singh Sethi  
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## Keynotes



### Statistical Machine Learning Problems in the Brain Sciences

**Robert E. Kass**

Maurice Falk Professor of Statistics and Computational Neuroscience

Department of Statistics, Department of Machine Learning, and Center for the Neural Basis of Cognition

Carnegie Mellon University

**2:10 pm - 3:00 pm, Monday Dec 17th**

**Abstract:** Machine learning may be considered the intersection of statistics and computer science. As a trained statistician who has participated actively in Carnegie Mellon's Machine Learning Department, I have been aware of the distinct perspectives these fields bring to machine learning, and would like to share some of my thoughts. I have also been involved in the brain sciences for roughly the past 20 years and will use several interesting examples drawn from neurophysiology to illustrate what I have to say. Finally, I will outline what I consider to be one of the most pressing and deep problems in the brain sciences, and will give reasons why good solutions will require new methods in statistical machine learning..

### Towards an era of intelligent interactive algorithms

**Dr. Aarti Singh**

Associate Professor, A. Nico Habermann Faculty Chair 2013-2016

Machine Learning Department

Carnegie Mellon University

**8:30 am - 9:30 am, Wednesday Dec 19th**

**Abstract:** Classical machine learning algorithms focus on the setting where the algorithm has access to a fixed dataset obtained prior to any analysis. In most applications, however, we have control over the data collection process such as which image labels to obtain, which drug-gene interactions to record, which network routes to probe, which movies to rate, etc. Furthermore, most applications face budget limitations on the amount and type of labels, data or features that can be collected. Decisions about which data to collect are typically taken by humans in an ad-hoc manner. Thus, there is a need to develop intelligent algorithms that can make principled and automated decisions to interact with the data generating mechanism and collect data that is most relevant for the learning task. In this talk, we ask the question - what does the freedom to interactively collect data buy us? I will present a sampling of work by my group on interactive methods for several learning problems such as regression, classification, matrix and tensor completion/approximation, column subset selection, learning structure of graphical models, reconstructing graph-structured signals, and clustering, as time permits. I will quantify the precise improvement in data efficiency, as well as demonstrate that interactive algorithms often also enable us to handle a larger class of data models. Finally, I will conclude with open directions and challenges that face interactive data analytics.

## Special Sessions

- Machine Learning on Big Data
- Machine Learning for Predictive Models in Engineering Applications
- Machine Learning Applications in Psychiatry
- Machine Learning Applications in Education
- Machine Learning in Energy Application
- Machine Learning Algorithms, Systems and Applications
- Machine Learning in Smart Grids
- Machine Learning in Big Data and Information Security Issues
- Machine Learning for Complex Data Mining Applications

## Convention Level – Tower 1

Key

Meal Room – Florida Ballroom A

General Session and Breakout – Florida Ballroom B-C

Breakout – Plaza Ballroom D

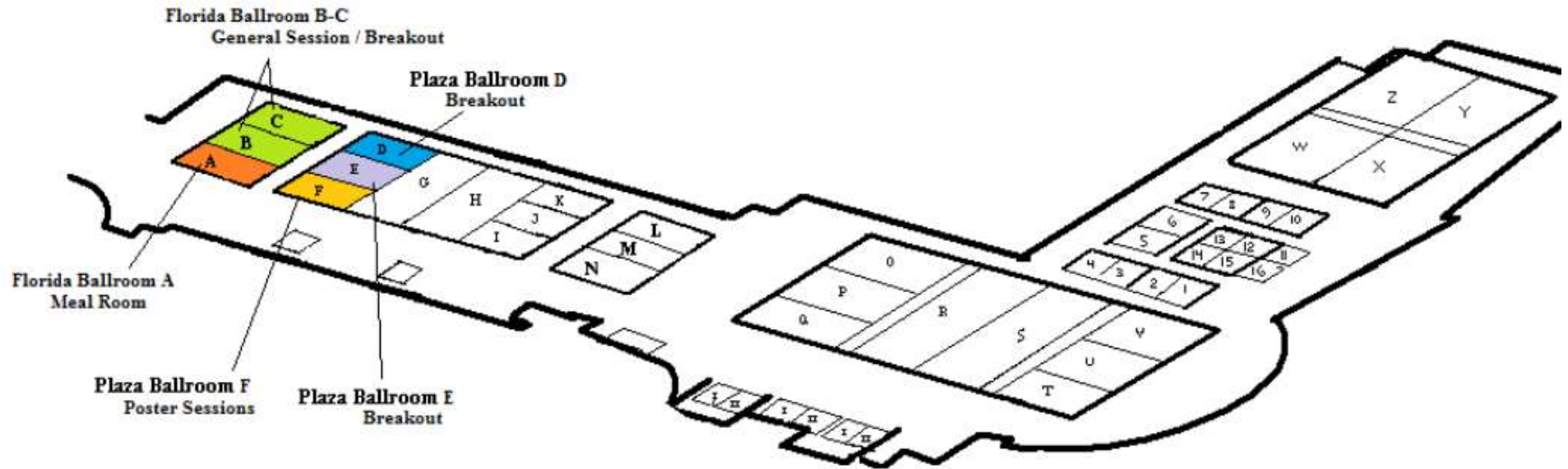
Breakout – Plaza Ballroom E

Poster Sessions – Plaza Ballroom F



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ORLANDO



# 17th IEEE ICMLA 2018 Conference Program

## Orlando, Florida, USA, December 17—20, 2018

### Dec. 17 Monday

Registration	10:00 am – 5:00 pm      Registration desk (Florida Foyer)	
02:00 pm - 2:10 pm	Opening remarks (Florida Ballroom B-C)	
2:10 pm - 3:00 pm	Invited talk (Florida Ballroom B-C) Statistical Machine Learning Problems in the Brain Sciences Robert E. Kass (Maurice Falk Professor of Statistics and Computational Neuroscience, Carnegie Mellon University)	
3:00 pm - 4:40 pm	Special Session: Machine Learning for Predictive Models in Engineering Applications (Florida Ballroom B-C)	Special Session on Machine Learning Applications in Psychiatry (Plaza D)
	Chair: Mohammad Azzeh	Chair: Daniel Stamate
	505. Detecting and Classifying Fetal Brain Abnormalities using Machine Learning Techniques  <i>Omneya Attallah (arab academy for science and technology and maritime transport); heba mehery (arab academy for science and technology and maritime transport); maha sharkas ( arab academy for science and technology and maritime transport)</i>	490. A Deep Neural Network Approach for Early Diagnosis of Mild Cognitive Impairment Using Multiple Features  <i>Parisa Forouzaneshad (Florida International University); Ali Reza Abbaspour (Florida International University); Chunfei Li (Florida international university); Mercedes Cabrerizo (Florida international university); Malek Adjouadi (Florida International University)</i>
	511. $\nu$ -SVR Polynomial Kernel for Predicting the Defect Density in New Software Projects  <i>Cuauhtemoc Lopez-Martin (Universidad de Guadalajara); Mohammad Azzeh (Applied Science University, Jordan); Ali Bou Nassif (university of sharjah); Shadi Banitaan (University of Detroit Mercy, USA)</i>	579. Detailed Analysis of the Luria’s Alternating Series Tests for Parkinson’s Disease Diagnostics  <i>Sven Nomm (Tallinn University of Technology); Konstantin Bardosh (Tallinn University of Technology); Aaro Toomela (Tallinn University); Kadri Medijainen (University of Tartu)</i>
	524. Real-Time Prediction of Employee Engagement Using Social Media and Text Mining  <i>Abbas Golestani (IBM); Mikhail Masli (IBM); N. Sadat Shami (IBM); Jennifer Jones (IBM); Abhilash Menon (IBM); Joydeep Mondal (IBM)</i>	582. Profile-Specific Regression Model for Progression Prediction of Alzheimer’s Disease Using Longitudinal Data.  <i>Solale Tabarestani (Florida International University); Maryamossadat Aghili (Florida International University); Mehdi Shojaie (Florida International University); Christian Freytes (Florida International University); Malek Adjouadi (Florida International University)</i>
	529. A Comparison of ARIMA and LSTM in Forecasting Time Series  <i>Sima Siami-Namini (Texas Tech University); Neda Tavakoli; Akbar Siami Namin (Computer Science Department, Texas Tech University)</i>	624. Lorenz Chaotic System Artificial Neural Network Training with Single Time Series Input and Multiple Time Series Outputs for EEG Prediction  Lei Zhang (University of Regina)
	545. Acute Kidney Injury: Predicting 30-Day Readmissions  <i>Raed Seetan (Slippery Rock University)</i>	592. Predicting Employer Recruitment of Individuals with Autism Spectrum Disorders with Decision Trees <i>Kayleigh Hyde (Chapman University); Amy Jane Griffiths (Chapman University); Cristina Giannantonio (Chapman University); Amy Hurley-Hanson (Chapman University); Erik Linstead (Chapman University)*</i>
	4:40 pm - 5:00 pm	Coffee Break (Florida Foyer)
5:00 : 6:40	Special Session: Machine Learning for Predictive Models in Engineering Applications (Florida Ballroom B-C)	Special Session: Machine Learning for Complex Data Mining Applications (Plaza D)
	Chair: Mohammad Azzeh	Chair: Turki Turki, Jason T. L. Wang
	543. Fine Object Detection in Automated Solar Panel Layout Generation  <i>Teng-Sheng Moh (San Jose State University)</i>	531. An ensemble approach to time dependent classification  <i>Florian van Daalen (University Maastricht); Evgueni Smirnov (Maastricht University); Nasser Davarzani (Maastricht University); Ralf Peeters (Maastricht University); Joël Karel (Maastricht University); Hans-Peter Brunner-La Rocca (Maastricht University)</i>
	557. Machine Learning for Predicting the Impact Point of a Low Speed Vehicle Crash	552. iCASSTLE : Imbalanced Classification Algorithm for Semi Supervised Text Learning



	<i>Milan Koch (BMW GROUP); Thomas Bäck (University Leiden)</i>	<i>Debanjana Banerjee (Walmart Labs); Gyan Prabhat (Walmart); Riyanka Bhowal (Walmart labs)</i>
	550. Vision-Based Detection of Simultaneous Kicking for Identifying Movement Characteristics of Infants At-Risk for Neuro-Disorders <i>Develeena Das (Georgia Institute of Technology); Katelyn Fry (Georgia Institute of Technology); Ayana Howard ( )</i>	590. Weighted Itemsets Error (WIE) Approach for Evaluating Generated Synthetic Patient Data <i>Mojtaba Zare (George Mason University); Janusz Wojtusiak (George Mason University)</i>
	554. Multivariate Time Series for Data-driven Endpoint Prediction in the Blast Oxygen Furnace <i>Davi A Sala (Ghent University-imec); Azarakhsh Jalalvand (Ghent University-imec); Andy Van Yperen-De Deyne (ArcelorMittal Gent); Erik Mannens (University of Gent)</i>	608. A joint Speech Enhancement Algorithm Based on the tri-microphone <i>Lei Wang (Shanghai Jiao Tong University); jie zhu (Shanghai Jiao Tong University)</i>
	594. Screening of Heart Sounds using Hidden Markov and Gammatone Filterbank Models <i>Ben Alexander (Vital Connect, Inc); Gabriel Nallathambi (Vital Connect, Inc); Nandakumar Selvaraj (Vital Connect, Inc)</i>	613. DLGraph: Malware Detection Using Deep Learning and Graph Embedding <i>Haodi Jiang (New Jersey Institute of Technology); Turki Turki (King Abdulaziz University); Jason T. L. Wang (New Jersey Institute of Technology)</i>

## Dec. 18 Tuesday

Registration	10:00 am – 5:00 pm		Registration desk (Florida Foyer)
8 am to 8:30 am	Continental breakfast (Florida Ballroom A)		
	Parallel Sessions		
08:30 am - 9:30 am	<p style="text-align: center;">Bioinformatics (Florida Ballroom B-C )</p> <p style="text-align: center;">Chair: Akshay Sharma</p>	<p style="text-align: center;">Machine learning applications (Plaza D)</p> <p style="text-align: center;">Chair:Tuan M. Lai</p>	<p style="text-align: center;">Advanced Machine learning with applications (Plaza E)</p> <p style="text-align: center;">Chair: Colin Elkin</p>
	<p>340. MedAL: Accurate and Robust Deep Active Learning for Medical Image Analysis <i>Pedro Miguel Vendas da Costa (FEUP); Asim Smailagic (Carnegie Mellon University); Devesh Walawalkar (Carnegie Mellon University); Kartik Khandelwal (Carnegie Mellon University); Jonathon Fagert (Carnegie Mellon University); Mostafa Mirshekari (Carnegie Mellon University); Xu Susu (Carnegie Mellon University); Hae Young Noh (Carnegie Mellon University); Adrian Galdran (INESC TEC Porto); Aurélio Campilho (Universita do Porto)</i></p>	<p>445. Interpretability and Reproducibility in Production Machine Learning Applications <i>Sindhu Ghanta (ParallelM); Swaminathan Sundararaman (ParallelM); Sriram Subramanian (ParallelM); Lior Khremosh (ParallelM); Vinay Sridhar (ParallelM); Dulcardo Arteaga (ParallelM); Qianmei Luo (ParallelM); Dhananjay Das (ParallelM); Nisha Talagala (ParallelM)</i></p>	<p>257. Detecting Different Types of Concept Drifts With Ensemble Framework <i>Hanqing Hu (University of Louisville); Mehmed Kantardzic (University of Louisville); Lingyu Lyu (University of Louisville)</i></p>
	<p>243. Direct-to-Patient Survey for Diagnosis of Benign Paroxysmal Positional Vertigo <i>Heidi A Richburg (Marquette University)*; Richard Povinelli (Marquette University); David Friedland (Medical College of Wisconsin)</i></p>	<p>482. CANONICAL ELM: IMPROVING THE PERFORMANCE OF EXTREME LEARNING MACHINES ON MULTIVARIATE REGRESSION TASKS USING CANONICAL CORRELATIONS <i>Babafemi Odelowo (Georgia Institute of Technology); David Anderson (Georgia Institute of Technology)</i></p>	<p>233. Adam Induces Implicit Weight Sparsity in Rectifier Neural Networks <i>Atsushi Yaguchi (Toshiba Corporation); Taiji Suzuki (University of Tokyo / RIKEN); Wataru Asano (Toshiba Corporation); Shuhei Nitta (Toshiba Corporation); Yukinobu Sakata (Toshiba Corporation); Akiyuki Tanizawa (Toshiba Corporation)</i></p>
	<p>444. Improving Neural Sequence Labelling using Additional Linguistic Information <i>MAHTAB AHMED (The University of Western Ontario); Muhammad Rifayat Samee (The University of Western Ontario); Robert Mercer (The University of Western Ontario)</i></p>	<p>430. Bias Evaluation of Professors' Reviews <i>Luiza Antonie (University of Guelph); Jeremy Foxcroft (University of Guelph); Gary Grewal (University of Guelph); Nirmal Narayanan (University of Guelph); Miana Plesca (University of Guelph); Rosina Ramirez (University of Guelph)</i></p>	<p>332. Cross-Cultural Music Emotion Recognition by Adversarial Discriminative Domain Adaptation <i>Yi Wei Chen (National Taiwan University); Yi-Hsuan Yang (Academia Sinica); Homer Chen (National Taiwan University)</i></p>
9:30 am - 10:50 am	<p style="text-align: center;">Neural networks with applications (Florida Ballroom B-C )</p> <p style="text-align: center;">Chair: Indra Chakraborty</p>	<p style="text-align: center;">Advanced classification methods with applications (Plaza D)</p> <p style="text-align: center;">Chair:K. Lavangnananda</p>	<p style="text-align: center;">Machine learning applications (Plaza E)</p> <p style="text-align: center;">Chair: Monowar H. Bhuyan</p>

	<p>126. Prediction of Sorghum bicolor Genotype from In-situ Images Using Autoencoder-identified SNPs</p> <p><i>Mihael Cudic (Carnegie Mellon University); Harjatin Baweja (CMU); Tanvir Parhar (CMU); Stephen Nuske (Carnegie Mellon University)</i></p>	<p>169. Interactive Evaluation of Classifiers under Limited Resources</p> <p><i>Sabit Hassan (Carnegie Mellon University in Qatar); Shaden Shaar (Carnegie Mellon University in Qatar); Saquib Razak (Carnegie Mellon University in Qatar); Bhiksha Raj (Carnegie Mellon University)</i></p>	<p>142. Learning to Fingerprint the Latent Structure in Question Articulation</p> <p><i>Mrityunjay Kumar (Talentica Software); Ravindra Guntur (Talentica Software)</i></p>
	<p>171. Network Traffic Prediction Using Recurrent Neural Networks</p> <p><i>Nipun Ramakrishnan (University of California, Berkeley); Tarun Soni (Northrop Grumman Inc.)</i></p>	<p>170. Machine Learning for Classification of Inhibitors of Hepatic Drug Transporters</p> <p><i>Natalia Khuri, Shantanu Deshmukh (Stanford University)</i></p>	<p>167. Machine Learning for US Army UAVs Sustainment: Assessing Effect of Sensor Frequency and Placement on Damage Information in the Ultrasound Signals</p> <p><i>Ramakrishna R Valisetty (US ARL)</i></p>
	<p>172. Biomedical Document Retrieval for Question Answering with Neural Sentence Matching</p> <p><i>Jiho Noh (University of Kentucky); Ramakanth Kavuluru (University of Kentucky)</i></p>	<p>188. Fine-grained Image Classification via Spatial Saliency Extraction</p> <p><i>juntan zhang (Availink)</i></p>	<p>177. Encoding Motion Primitives for Autonomous Vehicles using Virtual Velocity Constraints and Neural Network Scheduling</p> <p><i>Mogens Graf Plessen (Private)</i></p>
	<p>195. Flexible selecting of style to content ratio in Neural Style Transfer</p> <p><i>Taehee M Jeong (San José State University); Anubha Mandal (San José State University); Taehee Jeong (San José State University)</i></p>	<p>226. Classifying Eligibility Criteria in Clinical Trials Using Active Deep Learning</p> <p><i>Ching-Hua Chuan (University of Miami)</i></p>	<p>190. Using Multi-Task and Transfer Learning to Solve Working Memory Tasks</p> <p><i>T.S. Jayram (IBM Almaden); Tomasz Kornuta (IBM Research, Almaden); Ryan L. McAvoy (IBM Research); Ahmet Ozcan (IBM Almaden Research)</i></p>
10:50-11:10	Coffee Break (Florida Foyer)		
11:10-12:50	<p>Advances in Deep Learning (Florida Ballroom B-C)</p> <p>Chair: Tuan M. Lai</p>	<p>Machine Learning for recognition applications (Plaza D)</p> <p>Chair: Zhang Ming</p>	<p>Forecasting in time series (Plaza E)</p> <p>Chair: Monowar H. Bhuyan</p>
	<p>147. Financial Markets Prediction with Deep Learning</p> <p><i>JIA WANG (Computer Science Department of UMass Lowell); Tong Sun (Computer Science Department of UMass Lowell); Benyuan Liu (Computer Science Department of UMass Lowell); Yu Cao (The University of Massachusetts Lowell, USA); Degang Wang (GRC Capital LLC)</i></p>	<p>160. CURE-OR: CHALLENGING UNREAL AND REAL ENVIRONMENTS FOR OBJECT RECOGNITION</p> <p><i>Dogancan Temel (Georgia Institute of Technology); Jinsol Lee (Georgia Institute of Technology); Ghassan AlRegib (Georgia Institute of Technology)</i></p>	<p>143. Time Series Prediction of Agricultural Products Price based on Ensemble Learning of Recurrent Neural Networks</p> <p><i>Koichi Kurumatani (AIST)</i></p>
	<p>144. DeepHCF: A Deep Learning Based Hybrid Collaborative Filtering Approach for Recommendation Systems</p> <p><i>Meshal Alfarhood (University of Missouri-Columbia); Jianlin Cheng (University of Missouri)</i></p>	<p>163. Towards Robust Human Activity Recognition from RGB Video Stream with Limited Labeled Data</p> <p><i>Krishanu Sarker (Georgia State University); Jonathan Shihao Ji (Georgia State University); Mohamed E Masoud (Georgia State University); Saeid Belkasim (Georgia State university)</i></p>	<p>159. Towards Semi-Supervised Classification of Event Streams via Denoising Autoencoders</p> <p><i>Sebastian Kauschke (TU Darmstadt)</i></p>
	<p>138. Trademark Design Code Identification Using Deep Neural Networks</p> <p><i>Girish Showkatramani (USPTO); Nidhi Khatri (Arktix Solutions Inc); Arlene Landicho (Arktix Solutions, Inc.); Darwin Layog (Arktix Solutions, Inc.)</i></p>	<p>164. SPARSE KERNEL PCA FOR OUTLIER DETECTION</p> <p><i>Rudrajit Das (IIT Bombay); Aditya Golatkar (IIT Bombay); Suyash P. Awate (Indian Institute of Technology (IIT) Bombay)</i></p>	<p>178. Constrained Sparse Dynamic Time Warping</p> <p><i>Youngha Hwang (Purdue University); Saul Gelfand (Purdue University)</i></p>
	<p>115. Localized Deep Norm-CNN Structure for Face Verification</p> <p><i>Adil Al-Azzawi (University of Missouri-Columbia)</i></p>	<p>174. Joint Adversarial Domain Adaptation for Resilient WiFi-enabled Device-free Gesture Recognition</p> <p><i>Han Zou (UC Berkeley); Yuxun Zhou (UC Berkeley); Jianfei Yang (Nanyang Technological University); Costas Spanos (UC Berkeley)</i></p>	<p>185. Elastic Time Series Motifs and Discords</p> <p><i>Diego F Silva (Universidade Federal de São Carlos); Gustavo Batista (USP)</i></p>
	<p>433. Design and Implementation of an Automatic Object Recognition System using Deep Learning and an Array of One-Class SVMs</p> <p><i>Carlos A Quintero (Universidad de los Andes); Manuel Rios (Universidad Santo Tomás); Camilo Gamarra (Universidad Santo Tomás); Carlos Rodríguez (USTA)</i></p>	<p>387. Underwater Place Recognition in Unknown Environments with Triplet Based Acoustic Image Retrieval</p> <p><i>Pedro Otávio C S Ribeiro (Universidade Federal do Rio Grande); Matheus Santos (Universidade Federal do Rio Grande); Paulo Drews-Jr (Furg); Silvia Botelho (Federal University of Rio Grande); Lucas Longaray (Universidade Federal do Rio Grande);</i></p>	<p>468. Model Selection and Estimation of a Finite Shifted-scaled Dirichlet Mixture Model</p> <p><i>Rua T Alsuroji (Concordia university); Nizar Bouguila (Concordia University); Nuha Zamzami (Concordia University)</i></p>

		<i>Marcelo Pias (Universidade Federal do Rio Grande)</i>	
12:50-2:00 pm	Lunch break (Florida Ballroom A)		
2:00 pm - 3:20 pm	Deep Learning (Florida Ballroom B-C )	Clustering methods with applications (Plaza D)	Machine learning applications (Plaza E)
	Chair: Indra Priyadarsini S	Chair: Richard Povinelli	Chair: Samira Sadaoui
	181. Application of open source Deep Neural Networks for Object Detection in industrial Environments <i>Christian Poss (BMW Group)</i>	111. Inner Attention based bi-LSTMs with indexing for non-factoid Question Answering <i>Akshay Sharma (NITK); Chetan Harithas (NITK)</i>	117. Dynamic Analysis of Executables to Detect and Characterize Malware <i>Michael R Smith (Sandia National Laboratories)</i>
	261. Deep Convolution Neural Network Model to Predict Relapse in Breast Cancer <i>Alokkumar Jha (Insight Centre for data analytics, NUIG); Ghanshyam Verma (Insight Centre for data analytics, NUIG); Yasar Khan (Insight Centre for data analytics, NUIG); Qaiser Mehmood (Insight Centre for data analytics, NUIG); Dietrich Rebholz-Schuhmann (Insight Centre for data analytics, NUIG); Ratnesh Sahay (Insight Centre for data analytics, NUIG)</i>	137. Exploring Sentence Vector Spaces through Automatic Summarization <i>Adly Stapleton (Williams College); Jugal Kalita (University of Colorado Springs)</i>	197. An RNN-LSTM based Flavor Recommender Framework in Hybrid Cloud <i>Radhika EG (PSG College of Technology)</i>
	312. Analysis of Memory Capacity for Deep Echo State Networks <i>Xuanlin Liu (Beijing University of Posts and Telecommunications); Mingzhe Chen (Beijing University of Posts and Telecommunications); Changchuan Yin (Beijing University of Posts and Telecommunications); Walid Saad (Virginia Tech)</i>	404. Bounded Laplace Mixture Model with Applications to Image Clustering and Content Based Image Retrieval <i>Muhammad Azam (Concordia University); Nizar Bouguila (Concordia University)</i>	218. Machine Learning With Certainty: A Requirement For Intelligent Process Automation <i>D. Eric Chalmers (SurexDirect.com)</i>
	359. Improving L-BFGS Initialization For Trust-Region Methods In Deep Learning <i>Jacob Rafati (University of California, Merced); Roummel Marcia (University of California, Merced)</i>	467. CCDLC Framework: Combining Clustering with Deep Learning Classification for Semantic Clones <i>Abdullah M Sheneamer (Jazan University)</i>	343. Persona-based Multi-turn Conversation Model in an Adversarial Learning Framework <i>Oluwatobi Olabiya (Capital One); Anish Khazane (Capital One); Erik Mueller (Capital One)</i>
3:20 pm - 3:40 pm	Coffee Break (Florida Foyer)		
3:40 : 5:20	Optimization and advanced learning methods (Florida Ballroom B-C )	Computer vision (Plaza D)	Forecasting in time series (Plaza E)
	Chair: Indra Priyadarsini S	Chair: Kwangtaek Kim	Chair: Aruldoss Albert T
	134. Reinforcement Learning Algorithms for Uncertain, Dynamic, Zero-Sum Games <i>Snehasis Mukhopadhyay (Indiana University Purdue University Indianapolis); Omkar Tilak (Indiana University Purdue University Indianapolis); Subir Chakrabarti (Indiana University Purdue University Indianapolis)</i>	284. GAN-based super resolution for accurate 3D surface reconstruction from light field skin images towards haptic palpation <i>Myeongseob Ko (Incheon National University); Donghyun Kim (Korea University); Kwangtaek Kim (Incheon National University)</i>	153. Forecasting Residential Energy Consumption: Single Household Perspective <i>Katarina Grolinger (The University of Western Ontario); Monica Xiaouou Zhang (Western University); Miriam Capretz (The University of Western Ontario); Luke Seewald (London Hydro)</i>
	141. A Multi-Objective Rule Optimizer with an Application to Risk Management <i>Pietari Pulkkinen (Amazon); Neetesh Tiwari (Amazon); Akhil Kumar (Amazon); Christopher Jones (Amazon)</i>	286. Cognitive-Assisted Interactive Labeling of Skin Lesions and Blood Cells <i>Francois Luus (IBM Research); Ismail Akhalwaya (IBM Research); Naweed Khan (IBM Research)</i>	442. Time Series Classification to Improve Poultry Welfare <i>Alireza Abdoli (University of California, Riverside); Amy Murillo (University of California, Riverside); Michael Yeh (UC Riverside); Alec Gerry (University of California, Riverside); Eamonn Keogh (UC Riverside)</i>
216. Q-Learning Acceleration via State-space Partitioning	291. Detecting Star Cracks in Topography Images of specular Back Surfaces of structured Wafers	473. Sinkhorn Divergence of Topological Signature Estimates for Time Series Classification	



	<i>Haoran Wei (University of Delaware); Kevin Corder (); Keith Decker (University of Delaware)</i>	<i>Corinna Kofler (AAU Klagenfurt); Robert Muhr (Infineon Technologies Austria AG); Gunter Spöck (Alpen-Adria-Universität Klagenfurt)</i>	<i>Colin Stephen (Coventry University)</i>
	256. Improving Multi-Modal Optimization Restart Strategy Through Multi-Armed Bandit <i>Amaury Dubois (LISIC, Université du Littoral Côte d'Opale); Julien Dehos (LISIC, Université du Littoral Côte d'Opale); Fabien Teytaud (LISIC, Université du Littoral Côte d'Opale)</i>	419. Interactive Image Segmentation Using Multimodal Regularized Kernel Embedding  <i>El Moatasem M Madani (Alexandria University)</i>	481. An Attention Based Air Quality Forecasting Method  <i>Bo Liu (School of Software Engineering, Beijing University of Technology); Shua Yan (Beijing University of Technology); Jianqiang Li (School of Software Engineering, Beijing University of Technology); Guangzhi Qu (Oakland University); Yong Li (School of Software Engineering, Beijing University of Technology); Jianlei Lang (College of Environmental &amp; Energy Engineering, Beijing University of Technology); Rentao Gu (School of Information and Communication Engineering, Beijing University of Posts and Telecommunications)</i>
	435. Balanced Multi-Window Inference  <i>George Stantchev (Naval Research Laboratory); Joel Goodman (Naval Research Laboratory); Kevin Lorenz (Naval Research Laboratory); Crystal Acosta (Naval Research Laboratory)</i>	180. On the Performance Analysis of APIs Recognizing Emotions from Video Images of Facial Expressions <i>Ananya Bhattacharjee (Bangladesh University of Engineering and Technology); Tanmoy Pias (Bangladesh University of Engineering and Technology); Mahathir Ahmad (Bangladesh University of Engineering and Technology); Ashikur Rahman (BUET)</i>	187. Time Series Neural Networks For Real Time Sign Language Translation  <i>Tenzin Wangyal (Aruba)*; Sujay Kumar (Citrix); Varun Saboo (UCLA); Ramamoorthy Srinath (PES University)</i>
5:20 : 7:20 pm	Poster session (Plaza F)		
	202. Modelling Human Understanding of Thematic Roles with Motion Heuristics <i>Soumitra Samanta (University of Liverpool); Franklin Chang (University of Liverpool)</i>		
	205. Training an Emergency-Response Image Classifier on Signal Data <i>Aubrey O'Neal (University of Texas at Austin); Benjamin Rodgers (University of Texas at Austin); Justin Segler (University of Texas at Austin); Dhiraj Murthy (University of Texas at Austin); Nandhini Lakuduva (University of Texas at Austin)</i>		
	209. Automated Vulnerability Detection in Source Code Using Deep Representation Learning <i>Rebecca Russell (Draper); Louis Kim (Draper); Lei Hamilton (Draper); Tomo Lazovich (Lightmatter); Jacob A Harer (Boston University); Onur Ozdemir (Draper); Paul Ellingwood (Draper); Marc McConley (Draper)</i>		
	235. Modifying LSTM Posteriors with Manner of Articulation Knowledge to Improve Speech Recognition Performance <i>Pradeep Rangan (Indian Institute of Technology Kharagpur); Krothapalli Sreenivasa Rao (IIT Kharagpur)</i>		
	238. Denoising Auto-encoder with Recurrent Skip Connections and Residual Regression for Music Source Separation <i>Jen-Yu Liu (Research Center for IT Innovation, Academia Sinica); Yi-Hsuan Yang (Academia Sinica)</i>		
	241. Improving Web Application Firewalls through Anomaly Detection <i>Gustavo Betarte (Instituto de Computación, Facultad de Ingeniería, Universidad de la República); Eduardo Giménez (Tilsor SA, Uruguay); Rodrigo Martínez (Instituto de Computación, Facultad de Ingeniería, Universidad de la República); Alvaro Pardo (Universidad Católica del Uruguay)</i>		
	249. An Empirical Study on Class Rarity in Big Data <i>Richard Bauder (Florida Atlantic University); Taghi Khoshgoftaar (Florida Atlantic University); Tawfiq Hasanin (Florida Atlantic University)</i>		
	250. Classification of EEG Signals Using Neural Networks to Predict Password Memorability <i>Ruba Alomari (University of Ontario Institute of Technology); Miguel Vargas Martin (University of Ontario Institute of Technology)</i>		
	252. Improving Noise Tolerance of Hardware Accelerated Artificial Neural Networks <i>Wen Ma (Western Digital); Minghai Qin (Western Digital); Won Ho Choi (Western Digital); Pi-Feng Chiu (Western Digital); Martin Lueker-Boden (Western Digital)</i>		
	265. User-Centered Development of a Pedestrian Assistance System Using End-to-End Learning <i>Hasham Shahid Qureshi (Technische Universität Berlin); Tobias Glasmachers (Ruhr-University Bochum); Rebecca Wiczorek (Technische Universität Berlin)</i>		
	267. Similarity Estimation for Indian Classical Carnatic Music <i>Melody Moh (San Jose State University); Teng-Sheng Moh (San Jose State University)</i>		
	271. A Comparison of Supervised Approaches for Process Pattern Recognition in Analog Semiconductor Wafer Test Data <i>Stefan Schrunner (KAI - Kompetenzzentrum Automobil- und Industrieelektronik GmbH); Olivia Bluder (KAI - Kompetenzzentrum Automobil- und Industrieelektronik GmbH); Anja Zernig (KAI - Kompetenzzentrum Automobil- und Industrieelektronik GmbH); Andre Kaestner (Infineon Technologies Austria AG); Roman Kern (KNOW-CENTER GmbH)</i>		

273. Predicting Computer Performance based on Hardware Configuration Using Multiple Neural Networks <i>Meiliu Lu (CSU Sacramento)</i>
277. Computational Histological Staining and Destaining of Prostate Core Biopsy RGB Images with Generative Adversarial Neural Networks <i>Aman Rana (Massachusetts Institute of Technology); Gregory Yauney (Massachusetts Institute of Technology); Alarice Lowe (Brigham and Women's Hospital and Harvard Medical School); Pratik Shah (Massachusetts Institute of Technology)</i>
288. Packaging and Sharing Machine Learning Models via the Acumos Open Platform <i>Shuai Zhao (New Jersey Institute of Technology); Manoop Talasila (AT&amp;T Research Labs); Guy Jacobson (AT&amp;T Research Labs); Cristian Borcea (New Jersey Institute of Technology); Syed Anwar Aftab (AT&amp;T Research Labs); John F Murray (AT&amp;T Research Labs)</i>
306. Application of a Graphical Model to Investigate the Utility of Cross-channel Information for Mitigating Reverberation in Cochlear Implants <i>Lidea Shahidi (Duke University)</i>
307. Battery Degradation Temporal Modeling Using LSTM Networks <i>Mehdi Assefi (NEC Laboratories America, Inc.); ali hooshmand (NEC Laboratories America, Inc.); Hossein Hosseini (NEC Laboratories America, Inc.); Ratnesh Sharma (NEC Laboratories America, Inc.)</i>
309. On Developing a UAV Pursuit-Evasion Policy Using Reinforcement Learning <i>Bogdan Vlahov (Georgia Tech); Eric Squires (Georgia Tech Research Institute); Laura G Strickland (Georgia Tech Research Institute); Charles Pippin (Georgia Tech Research Institute)</i>
311. Recurrent Neural Networks based Obesity Status Prediction Using Activity Data <i>Qinghan Xue (Lehigh University); Xiaoran Wang (Samsung Research America); Samuel Meehan (Samsung Research America); Jilong Kuang (Samsung Research America); Mooi Choo Chuah (Lehigh University)</i>
314. An Explainable Memory-Enhanced Sequential Model for Financial Fraud Detection <i>Kunlin Yang (Renmin University of China)</i>
321. Imbalanced Toxic Comments Classification using Data Augmentation and Deep Learning <i>Mai Ibrahim (Alexandria University); Marwan Torki (Alexandria University); Nagwa El-Makky (Alexandria University)</i>
322. Alpha Model Domination in Multiple Choice Learning <i>Mike Brodie (Brigham Young University)</i>
329. Multi-Agent Reinforcement Learning Approach for Scheduling Cluster Tools with Condition Based Chamber Cleaning Operations <i>Cheolhui Hong (KAIST); Tae-eog Lee (KAIST)</i>
331. Density-Based Fuzzy C-Means Multi-Center Re-Clustering Radar Signal Sorting Algorithm <i>Sheng Cao (Harbin Institute of Technology); Shucheng Wang (Harbin Institute of Technology); Yan Zhang (Heilongjiang University)</i>
333. Learning Convolutional Networks From Ordered Features Of Generic Data <i>Eric D Golinko (Florida Atlantic University); Xingquan Zhu (Florida Atlantic University); Thomas Sonderman (Florida Atlantic University)</i>
LiveFace: A Multi-Task CNN for Fast Face-Authentication <i>Xiaowen Ying (Lehigh University); Xin Li (Lehigh University); Mooi Choo Chuah (Lehigh University)</i>
258. Worker Filtering with Limited Supervision in Crowdsourcing Systems <i>Lingyu Lyu (University of Louisville); Mehmed Kantardzic (University of Louisville); Hanqing Hu (University of Louisville)</i>
283. SEDAT: Sentiment and Emotion Detection in Arabic Text using CNN-LSTM Deep Learning <i>Malak A Abdullah (UNC Charlotte)*; Mirsad Hadzikadic (UNCC); Samira Shaikh (UNC-Charlotte)</i>
630. Use Online Dictionary Learning to Get Parts-based Decomposition of Noisy Data <i>Daming Lu (Baidu Research)</i>
221. Indexing Textually Related Software Vulnerabilities in Noisy Communities Through Topic Modeling <i>Carlos V Paradis (University of Hawaii at Manoa); Rick Kazman (University of Hawaii at Manoa); Ping Wang (University of Maryland, College Park)</i>
262. Supervised Max Hashing for Similarity Image Retrieval <i>Ali Al Kobaisi (University of Central Florida); Guo-Jun Qi (University of Central Florida)</i>
203. Deep Architectures for Spatio-Temporal Modeling: Automated Seizure Detection in Scalp EEGs <i>Meysam Golmohammadi (Temple University); Vinit Shah (Temple University); Saeedeh Ziyabari (Temple University); Iyad Obeid (Temple University); Joseph Picone (Temple University)</i>

**6:00  
PM**

**Reception (Plaza F)  
in parallel with Poster session**

# Dec. 19 Wednesday

Registration	10:00 am – 5:00 pm      Registration desk (Florida Foyer)		
8 am to 8:30 am	Continental breakfast (Florida Ballroom A)		
08:30 am - 9:30 am	Invited talk (Florida Ballroom B-C) Towards an era of intelligent interactive algorithms Aarti Singh (Associate Professor, Machine Learning Department, Carnegie Mellon University)		
Parallel Sessions			
9:30 am - 10:50 am	Neural networks with applications (Florida Ballroom B-C )	Advanced classification methods with applications (Plaza D)	Special Session: Machine Learning Algorithms, Systems and Applications (Plaza E)
	Chair: Shan Suthaharan	Chair: Samira Sadaoui	Chair: Khandaker A. Rahman
	156. Neural Fingerprint Enhancement  <i>Edward Raff (Booz Allen Hamilton)</i>	272. Auction Fraud Classification Based on Clustering and Sampling Techniques  <i>FARZANA ANOWAR (University of Regina); Samira Sadaoui (University of Regina); Malek Mouhoub (Univ. of Regina)</i>	508. Efficacy of Nonlinear Manifold Learning in Malware Image Pattern Analysis  <i>Piyush Sharma (Army Research Laboratory); Adrienne Raglin (Army Research Laboratory )</i>
	210. Learning in a Continuous-Valued Attractor Network  <i>Baram Sosis (University of Maryland); Garrett Katz (University of Maryland); James Reggia (University of Maryland)</i>	281. Evaluation of a new kernel-based classifier in eye pupil detection  <i>Pedro Henrique Barbosa Monforte (CEFET-RJ); Gabriel Araujo (CEFET/RJ); Amaro A Lima (CEFET/RJ)</i>	512. Development of a Deep-Learning-Based Method for Breast Ultrasound Image Segmentation <i>RANIA ALMAJALID (Pace University ); Juan Shan (Pace University)*; Yaodong Du (Pace University); Ming Zhang (Tufts Medical Center)</i>
	211. Convolutional Neural Networks for Automatic Threat Detection in Security X-ray Images <i>Trevor Morris (University of California, Santa Barbara); Tiffany Chien (UC Berkeley); Eric L Goodman (Sandia National Laboratories); Brandon Gutierrez (Sandia National Laboratories)</i>	293. A Rule-Based Classifier with Accurate and Fast Rule Term Induction for Continuous Attributes <i>Manal Almutairi (University of Reading); Frederic T Stahl (University of Reading)</i>	526. Supervised Transfer Learning for Product Information Question Answering <i>Tuan M Lai (Purdue University); Trung Bui (Adobe Research); Nedim Lipka (Adobe Research); Sheng Li (University of Georgia)</i>
	227. CrescendoNet: A New Deep Convolutional NeuralNetwork with Ensemble Behavior  <i>Xiang Zhang (Clemson University)</i>	310. An Approximative Bayes-optimal Kernel Classifier based on Version Space Reduction  <i>Karen Braga Enes (Universidade Federal de Minas Gerais); Saulo Villela (UFJF); Gisele Pappa (UFMG); Raul Fonseca Neto (UFJF)</i>	532. STARLORD: Sliding window Temporal Accumulate-Retract Learning for Online Reasoning on Datastreams <i>Cristian Axenie (Huawei ERC)*; Radu Tudoran (Huawei); Stefano Bortoli (Huawei); Mohamad Al Hajj Hassan (Huawei); Daniele Foroni (University of Trento); Goetz Brasche (Huawei ERC Munich)</i>
	10:50-11:10      Coffee Break (Florida Foyer)		
11:10-12:50	Advances in Deep Learning (Florida Ballroom B-C )	Machine Learning for recognition applications (Plaza D)	Special Session on Machine Learning in Energy Application (Plaza E)
	Chair: Indra Chakraborty	Chair: Colin Elkin	Chair: Halil Ibrahim BULBUL
	411. Deep Learning Convolutional Neural Networks with Dropout - a Parallel Approach  <i>Jingyi Shen (Carleton); Omair Shafiq (Carleton University)</i>	361. Learning Generative Models of Social Interactions with Humans-in-the-Loop  <i>Dan Feng (Northeastern University); Pedro Sequeira (Northeastern University); Elin Carstensdottir (Northeastern University); Magy Seif El-nasr (Northeastern University ); Stacy Marsella (Northeastern University)</i>	523. Unsupervised Anomaly Detection in Energy Time Series Data using Variational Recurrent Autoencoders with Attention <i>João Pereira (Instituto Superior Técnico); Margarida Silveira (Instituto Superior Técnico, Universidade de Lisboa)</i>
432. Angiodysplasia detection and localization using deep convolutional neural networks  <i>Alexey Shvets (Massachusetts Institute of Technology); Vladimir I Iglovikov (ods.ai); Alexander Rakhlin (Neuromation OU); Alexandr A. Kalinin (University of Michigan)</i>	367. Automatic Recognition of Mild Cognitive Impairment and Alzheimer's Disease Using Ensemble based 3D Densely Connected Convolutional Networks <i>Shuqiang Wang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences); Hongfei Wang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences); Yanyan Shen (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences); Peng Yin (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)</i>	609. Feature Extraction using Apparent Power and Real Power for Smart Home Data Classification  <i>Shan Suthaharan (University of North Carolina at Greensboro); Vishali Vadakattu (University of North Carolina at Greensboro)</i>	

	<p>449. Iterative Deep Learning Based Unbiased Stereology With Human-in-the-Loop</p> <p><i>SAEED ALAHMARI (University of South Florida)</i></p>	<p>399. A comparative evaluation of machine learning methods for robot navigation through human crowds</p> <p><i>Aleksei Shpilman (JetBrains Research)</i></p>	<p>610. Occupancy Detection in Smart Housing Using Both Aggregated and Appliance-Specific Power Consumption Data</p> <p><i>Daqing Hou (Clarkson University)</i></p>
	<p>466. Smoother Robot Control from Convolutional Neural Networks using Fuzzy Logic</p> <p><i>William K Born (Electrical Engineering and Computer Science Department, United States Military Academy, West Point, New York); Christopher Lowrance (Electrical Engineering and Computer Science Department, United States Military Academy, West Point, NY)</i></p>	<p>451. A Machine Learning Framework for Predicting Dementia and Mild Cognitive Impairment</p> <p><i>Daniel Stamate (Goldsmiths College, University of London); Wajdi Alghamdi (Data Science &amp; Soft Computing Lab, and Department of Computing, Goldsmiths College, University of London); Jeremy Ogg (Data Science &amp; Soft Computing Lab, and Department of Computing, Goldsmiths College, University of London); Taposhri Ganguly (Data Science &amp; Soft Computing Lab, and Department of Computing, Goldsmiths College, University of London); Richard Hoile (Department of Primary Care and Public Health, Brighton and Sussex Medical School); Fionn Murtagh (School of Computing and Engineering, University of Huddersfield.)</i></p>	<p>625. Discussion and review of the use of Neural networks to improve the flexibility of smart grids in presence of distributed renewable resources</p> <p><i>Zeineb Hammami (ISG); Moamar Sayed-Mauchaweh (IMT Lille-Douai); Wiem Mouelhi (ISG); Lamjed Ben Said (ISG)</i></p>
	<p>327. Sonar-to-Satellite Translation using Deep Learning</p> <p><i>Giovanni G Giacomo (Universidade Federal do Rio Grande); Matheus Machado (FURG); Paulo Drews Jr (Universidade Federal do Rio Grande); Silvia Botelho (Universidade Federal do Rio Grande)</i></p>	<p>406. Integrating Plausibility Checks and Machine Learning for Misbehavior Detection in VANET</p> <p><i>Steven B So (OnBoard Security); Prinkle Sharma (University of Massachusetts Dartmouth); Jonathan Petit (OnBoard Security)</i></p>	<p>617. Two stage machine learning framework for simultaneous forecasting of price-load in smart grid</p> <p><i>TANGARADJOU N ARULDOSS ALBERT VICTOIRE (ANNA UNIVERSITY)</i></p>
12:50-2:00 pm	Lunch break (Florida Ballroom A )		
	<p>Advances in Deep Learning (Florida Ballroom B-C )</p> <p>Chair: Shan Suthaharan</p>	<p>Advanced classification methods with applications (Plaza D)</p> <p>Chair: Md Shafaeat Hossain</p>	<p>Special Session: Machine Learning Algorithms, Systems and Applications (Plaza E)</p> <p>Chair: Jorge Hernandez Ambato</p>
	<p>166. Deep Bayesian Active Semi-Supervised Learning</p> <p><i>Matthias Rottmann (University of Wuppertal); Karsten Kahl (University of Wuppertal); Hanno Gottschalk (University of Wuppertal)</i></p>	<p>282. Graph Neural Networks for IceCube Signal Classification</p> <p><i>Nicholas J Choma (New York University); Federico Monti (Università della Svizzera Italiana ); Lisa Gerhardt (Lawrence Berkeley National Laboratory); Tomasz Palczewski (University of California, Berkeley); Zahra Ronaghi (Lawrence Berkeley National Laboratory); Mr Prabhat (Lawrence Berkeley National Laboratory); Wahid Bhimji (Lawrence Berkeley National Lab); Michael Bronstein (Imperial College); Joan Bruna (Courant Institute of Mathematical Sciences, NYU, USA)</i></p>	<p>561. Neural Adaptive Controller Applied to a VTOL Plant Using Takagi-Sugeno Fuzzy Model</p> <p><i>Andres Morcho-Caiza (Escuela Superior Politécnica de Chimborazo); Jesus Rodriguez-Flores (Escuela Superior Politécnica de Chimborazo); Jorge L Hernández-Ambato (Escuela Superior Politécnica de Chimborazo)</i></p>
	<p>335. Multi-Stream Convolutional Neural Networks for Action Recognition in Video Sequences Based on Adaptive Visual Rhythms</p> <p><i>Darwin Tito (IC-Unicamp); Helena Maia (IC-Unicamp); Helio Pedrini (Institute of Computing - UNICAMP); Hemerson Tacon (UFJF); Andre Brito (UFJF); Hugo Chaves (UFJF); Marcelo Bernardes Vieira (UFJF)</i></p>	<p>318. Detecting Compromised Implicit Association Test Results using Supervised Learning</p> <p><i>Brendon J Boldt (Marist College); Zack While (Youngstown State University); Eric Breimer (Siena College)</i></p>	<p>562. Detailed Identification of Fingerprints using Convolutional Neural Networks</p> <p><i>Yahaya I Shehu (Coventry University); Ariel Ruiz-Garcia (Coventry University); Vasile Palade (Coventry University); Anne James (Nottingham Trent University)</i></p>
	<p>392. Classification of Eye Tracking Data using a Convolutional Neural Network</p> <p><i>Yuehan Yin (Towson University); Chung Hao Juan (Towson University); Joyram Chakraborty (Towson University); Michael P. McGuire (Towson University)</i></p>	<p>431. Machine Learning Algorithms for Classification of Microcirculation Images from Septic and Non-Septic Patients</p> <p><i>Perikumar Javia (Massachusetts Institute of Technology); Aman Rana (Massachusetts Institute of Technology); Nathan Shairo (Beth Israel Deaconess Medical Center ); Pratik Shah (Massachusetts Institute of Technology)</i></p>	<p>533. A Minimum Spanning Tree Clustering Approach for Outlier Detection in Event Sequences</p> <p><i>Shahrooz Abghari (Blekinge Institute of Technology); Veselka Boeva (Blekinge Institute of Technology); Niklas Lavesson (Blekinge Institute of Technology); Håkan Grahn (Blekinge Institute Technology); Selim Ickin (Ericsson AB); Jörgen Gustafsson (Ericsson AB)</i></p>
	<p>393. Automatic Seizure Detection via an Optimized Image-based Deep Feature Learning</p>	<p>131. Actionable Pattern Mining - a Scalable Data Distribution Method Based on Information Granules</p>	<p>570. Pilot Skill Level and Workload Prediction for Sliding-Scale Autonomy</p>

2:00 pm - 3:20 pm	<i>Ibrahim Alkanhal (Carnegie Mellon University); B. V. K. Vijaya Kumar (CMU, USA)</i>	<i>Arunkumar Bagavathi, Abhishek Tripathi, Angelina A. Tzacheva, Zbigniew W. Ras (University of North Carolina at Charlotte)</i>	<i>Sai Nittala (University of Toledo); Colin Elkin (University of Toledo); Jay Kiker (University of California, Santa Barbara); Robert Meyer (The Perduco Group); James Curro (Air Force Institute of Technology); Ali Reiter (Wright State University); Kevin Xu (University of Toledo); Vijay K Devabhaktuni (University of Toledo)</i>
	455. Using Deep Learning-based Computer Vision to Detect Work Zones in SHRP2 NDS Video Data <i>Franklin Abodo (Florida International University); Robert Rittmuller (U.S. Department of Transportation); Brian Sumner (U.S. Department of Transportation); Andrew Berthaume (U.S. Department of Transportation)</i>	398. Parallel Attention Mechanisms in Neural Machine Translation <i>Julian R Medina (University of Colorado Springs); Jugal Kalita (University of Colorado Springs)</i>	
3:20 pm - 3:40 pm	Coffee Break (Florida Foyer)		
3:40 : 5:00	Optimization and advanced learning methods (Florida Ballroom B-C) Chair: Indra Priyadarsini S	Computer vision and Image segmentation (Plaza D) Chair: Zhang Ming	Special Session: Machine Learning Algorithms, Systems and Applications (Plaza E) Chair: Moamar Sayed-Mouchaweh
	328. Deep Reinforcement Learning for Fairness in Distributed Robotic Multi-type Resource Allocation <i>Qinyun Zhu (Syracuse University); Jae Oh (Syracuse University)</i>	151. ROI Detection in Mammogram Images using Wavelet-Based Haralick and HOG Features <i>Sena Büşra Yengec Taşdemir (Abdullah Gül University); Zafer Aydın (Abdullah Gül University)</i>	577. Centroid estimation based on symmetric KL divergence for Multinomial text classification problem <i>jiangning chen (Georgia institute of technology)</i>
	429. Deep Reinforcement Learning Monitor for Snapshot Recording <i>Giang H Dao (University of North Carolina at Charlotte); Indrajeet Mishra (University of North Carolina at Charlotte); Minwoo Lee (University of North Carolina at Charlotte)</i>	242. An Application of Generative Adversarial Networks for Super Resolution Medical Imaging <i>Rewa R Sood (Stanford University); Binit Topiwala (Stanford University); Karthik Choutagunta Nagaraj (Stanford University); Rohit Sood (Parexel Inc); Mirabela Rusu (Stanford University)</i>	596. Training Generative Adversarial Networks with Bidirectional Backpropagation <i>Bart Kosko (University of Southern California)</i>
	476. Lead Sheet Generation and Arrangement by Conditional Generative Adversarial Network <i>Hao Min Liu (Academia Sinica); Yi-Hsuan Yang (Academia Sinica)</i>	443. A Distributed Sensing Approach for Single Platform Image-based Localization <i>Orhan Akal (Florida State University); Tathagata Mukherjee (Intelligent Robotics Inc.); Adrian Barbu (Florida State University); Kevin George (Intelligent Robotics Inc.); Jared Paquet (University of Florida); Eduardo Pasillao (AFRL)</i>	611. Semi-supervised Deep Learning System for Epileptic Seizures Onset Prediction <i>Ahmed Abdelhameed (University of Louisiana at Lafayette); Magdy Bayoumi (University of Louisiana at Lafayette)</i>
	464. A Novel Neural Sequence Model with Multiple Attentions for Word Sense Disambiguation <i>MAHTAB AHMED (The University of Western Ontario); Muhammad Rifayat Samee (The University of Western Ontario); Robert Mercer (The University of Western Ontario)</i>	434. Automatic instrument segmentation in robot-assisted surgery using deep learning <i>Alexey Shvets (Massachusetts Institute of Technology); Alexander Rakhlin (Neuromation OU); Alexandr A. Kalinin (University of Michigan); Vladimir I Iglovikov (ods.ai)</i>	621. Position Specific Scoring Matrix and Synergistic Multiclass SVM for Identification of Genes <i>M. Arif Wani, Heena Farooq Bhat and Tariq Rashid Jan (University of Kashmir)</i>
5:00 : 7:00 pm	Poster session (Plaza F)		
	334. Design of River Water Quality Assessment and Prediction Algorithm <i>Sheng Cao (Harbin Institute of Technology); Shucheng Wang (Harbin Institute of Technology); Yan Zhang (Heilongjiang University)</i>		
	337. Teacher/Student Deep Semi-Supervised Learning for Training with Noisy Labels <i>Zeyad Hailat (Wayne State University); Xue-wen Chen (Wayne State University)</i>		
	338. A Pipeline for Optimizing F1-Measure in Multi-Label Text Classification <i>Bingyu Wang (Northeastern University); Cheng Li (Northeastern University); Virgil Pavlu (Northeastern University); Javed Aslam (Northeastern University)</i>		
	341. Resource-Size matters: Improving Neural Named Entity Recognition with Optimized Large Corpora <i>Sajawel Ahmed (Text Technology Lab, Goethe University Frankfurt), Alexander Mehler</i>		
	345. Online Orthogonal Regression Based on a Regularized Squared Loss <i>Roberto Souza (UFMG); Saul Leite (UFABC); Wagner Meira Jr. (UFMG); Eduardo Hruschka (USP)</i>		
	350. MULTIAGENT COORDINATION SYSTEMS BASED ON NEURO-FUZZY MODELS WITH REINFORCEMENT LEARNING <i>leonardeo forero (universidade estadual do rio de janeiro); Evelyn Batista (puc-rio); Marco Aurélio C. Pacheco (Pontifical Catholic University of Rio de Janeiro); Harold Dias Mello Junior (UERJ)</i>		
	351. Distributed Proximal Primal-Dual Method for Regularized Empirical Risk Minimization		



<i>Masoud Badii Khuzani (Harvard University)</i>
355. Implementation of a Smartphone as a Wearable and Wireless Gyroscope Platform for Machine Learning Classification of Hemiplegic Gait through a Multilayer Perceptron Neural Network <i>Robert LeMoyne (Northern Arizona University)</i>
356. Novel Approaches to Activity Recognition based on Vector Autoregression and Wavelet Transforms <i>Mubarak G Abdu-Aguye (Egypt-Japan University of Science and Technology); Walid Gomaa (Egypt-Japan university of science &amp; technology)</i>
362. Realtime Email delivery failure prediction using the One-vs-all classifier <i>Giruba Beulah SE (Microsoft R &amp; D Institute, Hyderabad); Abhijeet Singhai (Microsoft-MKG); Rashmi Ranjan Parida (Microsoft-MKG)</i>
365. LoGAN: Generating Logos with a Generative Adversarial Neural Network Conditioned on color <i>Ajkel Mino (Maastricht University); Gerasimos Spanakis (Maastricht University)</i>
377. Prediction of Ejection State for a Pneumatic Valve-controlled Micro-droplet Generator by a BP neural network <i>Fei Wang; Yiwei Wang; Weijie Bao; Zhixuan Er (Beijing University Of Technology); Xiyi Wang (Beijing Engineering Research Center for IoT software and Systems, Beijing University of Technology); Keyan Ren ; Zhihai Wang (Faculty of Information Technology, Beijing University of Technology)</i>
380. A Proposal for Reducing the Number of Trial-and-Error Searches for Deep Q-Networks Combined with Exploitation-Oriented Learning <i>Naoki Kodama (Tokyo University of Science); Kazuteru Miyazaki (National Institution for Academic Degrees and Quality Enhancement of Higher Education); Taku Harada (Tokyo University of Science)</i>
384. Machine Cognition of Violence in Videos using Novel Outlier-Resistant VLAD <i>Adnan Firoze (North South University and Columbia University in the City of New York); Tonmoay Deb (North South University); Aziz Arman (North South University)</i>
385. Applying Machine Learning to the Static Prediction of Locality-Pattern Complexity in Scientific Code <i>Steven Carr (Western Michigan University); Nasser Alsaedi (Western Michigan University); Alvis Fong (WMICH, USA)</i>
386. Deep Domain Adaptation to Predict Freezing of Gait in Patients with Parkinson's Disease <i>Vishwas Torvi (Florida State University); Aditya Bhattacharya (Florida State University); Shayok Chakraborty (Florida State University, USA)</i>
513. Image-Audio Encoding for Information Camouflage and Improving Malware Pattern Analysis <i>Piyush Sharma (Army Research Laboratory); Adrienne Raglin (Army Research Laboratory)</i> <i>Piyush Sharma (Army Research Laboratory); Adrienne Raglin (Army Research Laboratory)</i> <i>Piyush Sharma (Army Research Laboratory); Adrienne Raglin (Army Research Laboratory)</i>
547. Web application attacks detection using machine learning techniques <i>Rodrigo Martínez (Instituto de Computación, Facultad de Ingeniería, Universidad de la República); Alvaro Pardo (Universidad Católica del Uruguay); Gustavo Betarte (Instituto de Computación, Facultad de Ingeniería, Universidad de la República)</i>
593. Cognitive Secure Shield – A Machine Learning enabled threat shield for resource constrained IoT Devices <i>Chandrasekar Vuppapalapati (Hanumayamma Innovations and Technologies Inc); Anitha Ilapakurti (Hanumayamma Innovations and Technologies Inc); Jaya shankar Vuppapalapati (Hanumayamma Innovations and Technologies, inc); Chitanshu Chauhan (Hanumayamma Innovations and Technologies, Inc); Surbhi Rautji (Hanumayamma Innovations and Technologies, Inc); Vanaja Mamidi (Hanumayamma Innovations and Technologies, Inc); Santosh Kedari (Hanumayamma Innovations and Technologies Inc)</i>
522. Asymmetric Gaussian-based Statistical Models Using Markov Chain Monte Carlo Techniques for Image Categorization <i>(Shuai Fu (Concordia University); Nizar Bouguila (Concordia University))</i>
525. Neural Machine Translation Advised by Statistical Machine Translation: The Case of Farsi–Spanish Bilingually Low–Resource Scenario <i>Benyamin Ahmadnia (Autonomous University of Barce); Parisa Kordjamshidi (Tulane University); Reza Haffari (Monash University, Australia)</i>
539. A New Strategy for Rotating Machinery Fault Diagnosis under Varying Speed Conditions Based on Deep Neural Networks and Order Tracking <i>Meng Rao (University of Alberta); Ming J Zuo (University of Alberta)</i>
541. Predicting Secondary Equity Offerings (SEOs) Using Machine Learning <i>Jianhua Chen (Louisiana State University); Linlin Cui (Louisiana State University); Wentao Wu (Louisiana State University)</i>
515. Object Counting on Low Quality Images: A Case Study of Near Real-Time Traffic Monitoring <i>Jean-Francois Rajotte (CRIM); Martin Sotir (CRIM)</i>
548. Vehicle Action Prediction Using Artificial Intelligence <i>Kevin Meng (Plano West Senior High School); Cheng Shi (Novratis ); Yu Meng (Oncor Electric Delivery)</i>
568. Anomaly Detection using Deep Learning based Image Completion <i>Matthias Haselmann (Polymer Competence Center Leoben GmbH); Dieter Gruber (Polymer Competence Center Leoben GmbH); Paul Tabatabai (Polymer Competence Center Leoben GmbH)</i>
576. Classification of Breast Cancer Risk Factors Using Several Resampling Approaches <i>Md Faisal Kabir (North Dakota State University); Simone Ludwig (North Dakota State University)</i>
542. Fast Semantic Proposals for Image and Video Annotation using Modified Echo State Networks

	<i>Sohini Roychowdhury (Volvocars R&amp;D USA); Srikar Muppirisetty (Volvocars)</i>
	585. The Semantic Shapes of Popular Music Lyrics: Graph-Based Representation, Analysis, and Interpretation of Popular Music Lyrics in Semantic Natural Language Embedding Space <i>Mitsunori Ojihara (University of Miami); Daniel Galarraga (Cornell University); Gang Ren (University of Miami); Tiago Tavares (University of Campinas)</i>
	371. Object Detection based on Multi-sensor Proposal Fusion in Maritime Environment <i>Fahimeh Farahnakian (University of Turku); Mohammad-Hashem Haghbayan (University of Turku); Jonne Poikonen (University of Turku); Markus Laurinen (Rolls-Royce); Paavo Nevalainen (University of Turku); Jukka Heikkonen (University of Turku)</i>
	488. Local Sensitive Hashing (LSH) and Convolutional Neural Networks (CNN) for Object Recognition <i>Mehdi Ghayoumi (Binghamton University)</i>

<b>8:00 PM</b>	<b>Conference Banquet (Florida Ballroom A)</b>
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	<b>Dec. 20 Thursday</b>
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8 am to 8:30 am	Continental breakfast (Florida Ballroom A)
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Registration	9:00 am- 12 am      Registration desk (Florida Foyer)
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	Parallel Sessions
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8:30 am - 9:50 am	Graphical models and feature selection and extraction (Florida Ballroom B-C) Chair: Sven Nömm	Machine learning applications (Plaza D) Chair: Md Shafaeat Hossain
	132. Recursive Feature Elimination by Sensitivity Testing <i>Nicholas Sean A Escanilla (University of Wisconsin, Madison); Lisa Hellerstein (NYU Tandon School of Engineering); Zhaobin Kuang (University of Wisconsin, Madison); Ross Kleiman (University of Wisconsin, Madison); James D Shull (); David Page (University of Wisconsin, Madison)</i>	275. Towards Affect Recognition through Interactions with Learning Materials <i>Esam A. H. Ghaleb (Maastricht University); Mirela Popa (Maastricht University); Enrique Hortal (Maastricht University); Stylianos Asteriadis (Maastricht University)</i>
	158. Future Trajectory Prediction via RNN and Maximum Margin Inverse Reinforcement Learning <i>Dooseop Choi (ETRI); Taeg-Hyun An (ETRI); Kyoungwan Ahn (ETRI); Jeongdan Choi (ETRI)</i>	344. Bidirectional Long Short-Term Memory Networks for Rapid Fault Detection in Marine Hydrokinetic Turbines <i>David Wilson (Florida Atlantic University); Sean Passmore (Florida Atlantic University); Yufei Tang (Florida Atlantic University); James VanZwieten (Florida Atlantic University)</i>
	296. Using Discriminative Graphical Models for Insurance Recommender Systems <i>Maleeha Qazi (American Family Insurance); Teja Simha Kanchinadam (American Family Insurance); Glenn M Fung (American Family Insurance); Joe Bockhorst ()</i>	413. Multilinear Discriminant Analysis through Tensor-Tensor Eigendecomposition <i>Randy C. Hoover (South Dakota School of Mines and Technology); Kyle A Caudle (South Dakota School of Mines and Technology); Karen Braman (South Dakota School of Mines and Technology)</i>
	304. A Monte Carlo tree search approach to learning decision trees <i>C. Nunes (Universitat Pompeu Fabra (Spain), Philips Research (France)); Mathieu De Craene (Philips Research Medisys); Helene Langet (Philips Research Medisys); Oscar Camara (Universitat Pompeu Fabra); Anders Jonsson (UPF)</i>	396. Stacked Denoising Autoencoders for Mortality Risk Prediction Using Clinical data <i>Zakhriya Alhassan (Durham University)</i>
	9:50-11:10 am	Special Session: Machine Learning in Big Data and Information Security Issues (Florida Ballroom B-C) Chair: Seref SAGIROGLU TBC

538. Semantic indexing-based data augmentation for filtering undesired short text messages <i>Johannes Von Lochter (University of Campinas); Renato M Silva (Federal University of São Carlos); Tiago Almeida (Federal University of São Carlos)</i>	537. Sensitivity Analysis for Feature Selection <i>Firuz Kamalov (Canadian University of Dubai)</i>
535. Multi-Scale Low-Rate DDoS Attack Detection Using the Generalized Total Variation Metric <i>Monowar Hussain Bhuyan (Umea University); Erik Elmroth (Umea University)</i>	586. Multimodal Sentiment Analysis Using Deep Learning <i>Rakhee Sharma (UQAM); Tan Le Ngoc (UQAM); fatiha sadat (UQAM)</i>
563. Unsupervised Anomaly Based Botnet Detection in IoT Networks	597. 4Phase: LSTM Training Procedure to Identify Novel-Cuisine Restaurants

	<i>Sven Nomm (Tallinn University of Technology)</i>	<i>Edoardo Serra (Boise State University); Haritha Akella (Boise State University); alfredo cuzzocrea ( University of Trieste)</i>
	575. Movement Pattern Based Authentication for Smart Mobile Devices  <i>Khandaker Rahman ("Saginaw Valley State University, Michigan"); Dustyn Tubbs (Saginaw Valley State University); Md Hossain (Southern Connecticut State University)</i>	631. Token-Based Adaptive Time-Series Prediction by Ensembling Linear and Non-Linear Estimators  <i>Kyle Morris; Sean Egan; Jorell Linsangan; Carson K. Leung; Alfredo Cuzzocrea</i>
		569. Comparison of Pre-trained Word Vectors for Arabic Text Classification using Deep Learning Approach  <i>Ali Alwehaibi, Kaushik Roy (NCA&amp;T)</i>
11:10-11:30	Coffee break (Florida Foyer)	
11:30 am - 12:50 pm	Special Session on Machine Learning in Energy Application (Florida Ballroom B-C)  Chair: Halil Ibrahim BULBUL	Special Session: Machine Learning Algorithms, Systems and Applications (Plaza D)  Chair: S. N. Deepa SN
	497. Adaptive Regularized ELM and Improved VMD method for Multi-step ahead Electricity Price Forecasting  <i>TANGARADJOU N ARULDOSS ALBERT VICTOIRE (ANNA UNIVERSITY); Govindaraj S (Anna University); DEEPA SN (ANNA UNIVERSITY); Kanimozhi P (ANNA UNIVERSITY); Jaikumar S (ANNA UNIVERSITY); Gobu B (ANNA UNIVERSITY)</i>	495. Fault Diagnosis Method Based on Scaling Law for On-line Refrigerant Leak Detection  <i>Shun Takeuchi (Fujitsu Laboratories Ltd.)</i>
	499. Annotating the performance of industrial assets via relevancy estimation of event logs  <i>Pierre Dagnely (Sirris); Tom Tourwé (Sirris); Elena Tsiorkova (Sirris)</i>	540. Finite multi-dimensional generalized Gamma Mixture Model Learning based on MML  <i>Basim Alghabashi (Concordia University); Nizar Bouguila (Concordia University)</i>
	502. Virtual Battery Parameter Identification using Transfer Learning based Stacked Autoencoder  <i>Indrasis Chakraborty (Pacific NorthWest National Lab); Sai Pushpak Nandanoori (Pacific Northwest National Laboratory); Soumya Kundu (PNNL)</i>	553. Extreme Solutions NSGA-III (E-NSGA-III) for Scientific Workflow Scheduling on Cloud  <i>Kittichai - Lavangnananda (King Mongkut's University of Technology Thonburi (KMUTT)); Peerasak Wangsom (King Mongkut's University of Technology Thonburi (KMUTT)); Pascal Bouvry (University of Luxembourg, Singapore University of Technology and Design)</i>
	583. Local Feature Sufficiency Exploration for Predicting Security-constrained Generation Dispatch in Multi-Area Power Systems  <i>Yixuan Sun (Purdue University); Qihua Huang (PNNL); Xiaoyuan Fan (Pacific Northwest National Laboratory); Xinya Li (Pacific Northwest National Laboratory); Renke Huang (Pacific Northwest National Laboratory); Tianzhixi Yin (Pacific Northwest National Laboratory); Guang Lin (Purdue University)</i>	558. Implementation of a modified Nesterov's Accelerated quasi-Newton Method on Tensorflow  <i>Indrapriyadarsini Sendilkumaar (Shizuoka University); Shahrzad Mahboubi (Shonan Institute of Technology); Hiroshi Ninomiya (Shonan Institute of Technology); Hideki Asai (Shizuoka University)</i>
12:50-2:00 pm	Lunch Break (Florida Ballroom A)	
	Special Session: Machine Learning Applications in Education (Florida Ballroom B-C)  Chair: Halil Ibrahim BULBUL	Special Session: Machine Learning for Predictive Models in Engineering Applications (Plaza D)  Chair: Mohammad AzzeH
	510. Multiagent Based System for Secondary Education Using Machine Learning  <i>Aslam Muhammad (University of Engineering and Technology, Lahore)</i>	574. Bug Report Classification using LSTM architecture for More Accurate Software Defect Locating  <i>Xin Ye (California State University San Marcos); Fan Fang (California State University San Marcos); John Wu (California State University San Marcos); Razvan Bunescu (Ohio University); Chang Liu (Ohio University)</i>
	560. Xiao-Shih: the Educational Intelligent Question Answering Bot on Chinese-based MOOCs  <i>Hao-Hsuan Hsu (National Tsing Hua University); Nen-Fu Huang (National Tsing Hua University)</i>	528. Frequent Chronicle Mining: Application on Predictive Maintenance  <i>Chayma Sellami (ESEN); Ahmed Samet (INSA); Mohamed Anis Bach Tobji (ESEN)</i>
	622. Fuzzy Echo State Neural Network with Differential Evolution framework for Time Series Forecasting	578. Analysis of Railway Accidents' Narratives Using Deep Learning

2:00-3:20 pm	<p><i>Govindaraj S (Anna University)</i></p>	<p><i>Mojtaba Heidarysafa (University of Virginia); Kamran Kowsari (University of Virginia); Donald Brown (University of Virginia); Laura E Barnes (University of Virginia)</i></p>
	<p>598. Image to Multilingual Text Conversion for Literacy Education</p> <p><i>Muhammad Ajmal (COMSATS University); Farooq Ahmad (COMSATS University, Lahore Campus, Lahore, Pakistan); Martinez-Enriquez A.M. (Department of Computer Science, CINVESTAV-IPN); Mudasser Naseer (University of Lahore); Aslam Muhammad (University of Engineering and Technology, Lahore); Mohsin Ashraf (NORTHWEST University, Xian)</i></p>	<p>591. Machine Learning-based Prediction of Prolonged Length of Stay in Newborns</p> <p><i>(Brandon Thompson; Kaim O. Elish; Robert Steele)</i></p>
	<p>573. What are they Researching? Examining Industry-based Doctoral Dissertation Research through the Lens of Machine Learning</p> <p><i>Suzanna Schmeelk (Pace University); Ashley Haigler (Pace University); Lisa Ellrodt (Pace University)</i></p>	<p>556. Ensemble of Learning Project Productivity in Software Effort Based on Use Case Points</p> <p><i>Mohammad Azzeh (Applied Science University, Jordan); Ali Bou Nassif (university of sharjah); Shadi Banitaan (University of Detroit Mercy, USA); Cuauhtemoc Lopez-Martin (Universidad de Guadalajara)</i></p>
	<p>618. Estimating the Effect of Structural Damage On The Flight By Using Machine Learning</p> <p><i>Hüseyin Seçkin Dikbayır (TAI); Halil Ibrahim BULBUL (Gazi University)</i></p>	
<b>03:20 pm</b>	<b>Closing remarks (Florida Ballroom B-C)</b>	