IEEE IRI 2017 Agenda

Day 1: Friday, August 4, 2017

8:30 – 8:45 a.m. Welcome, Conference Opening Remarks Location: *(Connections 1)*

8:45 – 9:45 a.m. Keynote 1 Location: *(Connections 1)*

Building Cognitive Information Systems

Heiko Ludwig Research Staff Member/Manager Ubiquitous Platforms, Almaden Research Center, San Jose, CA, USA

9:45 – 10 a.m. Break Location: *(Compass 2)*

10 a.m. – Noon Sessions & Workshops

Session A11: Security and Privacy

Chair: **Thouraya Bouabana Tebibel** Location: *(Navigator)*

- Towards Managing Complex Data Sharing Policies with the Min Mask Sketch Stephen Smart (University of Oklahoma, USA), Christan Grant (University of Oklahoma, USA)
- Cyber-Secure UAV Communications using Heuristically Inferred Stochastic Grammars and Hard Real-Time Adaptive Waveform Synthesis and Evolution (Invited Paper) Stuart Rubin (Space and Naval Warfare Systems Center Pacific, USA), William Grefe (Space and Naval Warfare Systems Center Pacific, USA), Thouraya Bouabana-Tebibel (Ecole Nationale

Supérieure d'Informatique, LCSI Laboratory, ALGERIA), Shu-Ching Chen (Florida International University, USA), Mei-Ling Shyu (University of Miami, USA), Kenneth Simonsen (Space and Naval Warfare Systems Center Pacific, USA)

 Access Control Models for Virtual Object Communication in Cloud-Enabled IoT (Invited Paper)

Asma Alshehri (UTSA), Ravi Sandhu (University of Texas at San Antonio)

Malware Collection and Analysis (Invited Paper)
 Ramkumar Paranthaman (Texas at Dallas Richardson), Bhavani Thuraisingham (Texas at Dallas
 Richardson)

Session A12: Modeling and Mining

Chair: Latifur Khan

Location: *(Connections 2)*

- Unsupervised Terminological Ontology Learning based on Hierarchical Topic Modeling Xiaofeng Zhu (Northwestern University), Diego Klabjan (Northwestern University), Patrick Bless (Intel Corporation)
- Extracting Knowledge from Technical Reports for the Valuation of West Texas Intermediate Crude Oil Futures Joseph Prusa (Florida Atlantic University), Ryan Sagul (Florida Atlantic University), Taghi M. Khoshgoftaar (Florida Atlantic University), Michael Sterling (Florida Atlantic University)
- Business Objects plus (BO+): An Approach to Enhance Service Reuse and Integration in Cross-Domain SOA Compounds Jan Königsberger (Graduate School advanced Manufacturing Engineering), Bernhard Mitschang (University of Stuttgart)
- On Using Disparate Scholarly Data to Identify Potential Member for Interdisciplinary Research Groups

Frank Osuna (University of Texas at El Paso), Monika Akbar (University of Texas at El Paso), Ann Gates (University of Texas at El Paso)

IEEE International Workshop on Information Integration in Cyber Physical Systems (IICPS)

Chair: Massimiliano Albanese

Location: (Connections 3)

- Traffic Surveillance System for Bridge Vibration Analysis (Regular Paper) Takaya Kawakatsu (The University of Tokyo, Japan), Kenro Aihara, Atsuhiro Takasu, Jun Adachi (National Institute of Informatics)
- Blockchain-assisted Information Distribution for the Internet of Things (Regular Paper) George C. Polyzos, Nikos Fotiou (Athens University of Economics and Business, Greece)
- A Collaborative Robotic Cyber Physical System for Surgery Applications (Regular Paper) Daniela D'Auria (University of Naples, Italy), Fabio Persia (Free University of Bolzano-Bozen, Italy)
- Active Dependency Mapping: A Data-Driven Approach to Mapping Dependencies in
 Distributed Systems (Regular Paper)
 Alexia Schulz, Michael Kotson, Chad Meiners, Timothy Meunier (MIT Lincoln Laboratory, USA),
 David O'Gwynn (Bellhaven University, USA), Pierre Trepagnier, David Weller-Fahy (MIT Lincoln

Noon – 1:30 p.m. Lunch (*Compass 2*)

1:30 – 2:30 p.m. Keynote 2

Laboratory, USA)

Location: (Connections 1)

Standing on the Shoulders of Giants: Reuse and Integration as the Pipeline of Naval Technology

Stephen Russell

Director of Science and Technology, Chief Technology Officer, Space and Naval Warfare Systems Command Director, Science and Technology Department, Space and Naval Warfare Systems Center Pacific 2:45 – 4:45 p.m. Sessions & Workshops

Session A2: Decision Support

Chair: Monika Akbar Location: *(Navigator)*

- Automated Dynamic Negotiation over Environmental Issues Faezeh Eshragh (University of Calgary), Mozhdeh shahbazi (University of Calgary), Behrouz Far (University of Calgary)
- A Scalable Spark-Based Fault Diagnosis Platform for Gearbox Fault Diagnosis in Wind Farms

Maryam Bahojb Imani (University of Texas at Dallas), Mehrdad Heydarzadeh (University of Texas at Dallas), Mehrdad Nourani (University of Texas at Dallas), Latifur Khan (The university of Texas at Dallas)

- A Cyber-Provenance Infrastructure for Sensor-Based Data-Intensive Applications Elisa Bertino (Purdue University) Murat Kantarcioglu (University of Texas at Dallas)
- A Novel Approach to Neural Network Based Intelligent Systems for Emotion Recognition in Audio Signals (Application Paper) Abdelnsier Mooman (University of Waterloo)

Session APP1: Applications: Detection

Note: the presentation for application papers should be limited to 20 min including Q&A.

Chair: Ali Hurson

Location: (Connections 2)

- Constructing Financial Sentiment Lexicons by Integrating Textual and Time-Series Data Kazuhiro Seki (Konan University)
- Towards using KDD for an Interactive Software Architecture Extraction Mira abboud (University of Nantes), Hala Naja (Lebanese University), Mourad Oussalah (University of Nantes), Mohamad Dbouk (Lebanese University)
- Fresh-Phish: A Framework for Auto-Detection of Phishing Websites Hossein Shirazi (Colorado State University), Kyle Haefner (Colorado State University), Indrakshi Ray (Colorado State University)
- Mining Social Media Data Using Topological Data Analysis Khaled Almgren (University of Bridgeport), Minkyu Kim (ASML), Jeongkyu Lee (University of Bridgeport)
- User Behavior Anomaly Detection for Application Layer DDoS Attacks
 Maryam Najafabadi (Florida Atlantic University), Taghi M. Khoshgoftaar (Florida Atlantic
 University), Chad Calvert (Florida Atlantic University), Clifford Kemp (Florida Atlantic University)
- Species Distribution Modelling with Scalability: The Case Study of P-GARP, a Parallel Genetic Algorithm for Rule-Set Production Fabiana Santana (University of Canberra)

IEEE International Workshop on Data Integration and Mining (DIM)

Chairs: Qiusha Zhu and Mei-Ling Shyu

Location: (Connections 3)

- A Hybrid Machine Learning Method for Finding Depression Related Publications by Eliminating Outlier Publications Zhibo Wang (Georgia State University), Long Ma (Georgia State University), and Yanqing Zhang (Georgia State University)
- Addressing Forest Management Challenges by Refining Tree Cover Type Classification with Machine Learning Models Duncan MacMichael (University of Washington, Bothell) and Dong Si (University of Washington, Bothell)
- An Architecture Application for the Internet of Things and the Use of Big Data Techniques on CO Analysis in Sao Paulo City Marco Aurelio Borges (Universidade Presbiteriana Mackenzie), Leandro A. Silva (Universidade Presbiteriana Mackenzie), Paulo Batista Lopes (Universidade Presbiteriana Mackenzie), and Massaki de O. Igarashi (Universidade Presbiteriana Mackenzie)
- A Software Solution for Preventing Alzheimer's Disease Based on MapReduce Framework Manal Zettam (University Kenitra Morocco), Jalal Laassiri (University Kenitra Morocco), and Noureddine Enneya (University Kenitra Morocco)

5:30 – 6:30 p.m. Reception Location: *(Pool Patio)*

Day 2: Saturday, August 5, 2017

8:45 – 9:45 a.m. Keynote 3

Location: *(Connections 1)*

Security and Privacy in the IoT

Elisa Bertino

Professor, Department of Computer Science, Purdue University, West Lafayette, Indiana, USA

9:45 – 10 a.m. Break Location: *(Compass 2)*

10 a.m. – Noon Sessions & Workshops

Session B11: Diagnosis and Prediction

Chair: Sahra Sedigh Sarvestani

Location: (Navigator)

- FA-MCADF: Feature Affinity Based Multiple Correspondence Analysis and Decision Fusion Framework for Disaster Information Management Haiman Tian (Florida International University), Shu-Ching Chen (Florida International University), Stuart H. Rubin (Space and Naval Warfare Systems Center Pacific, San Diego, CA, USA), William K. Grefe (Space and Naval Warfare Systems Center Pacific, San Diego, CA, USA)
- Link Prediction and Hybrid Strategies for Updating a Social Graph Snapshot via a Limited API

Norases Vesdapunt (Stanford University), Hector Garcia-Molina (Stanford University)

- Detecting Small Signs from Large Images (Invited Paper) Zibo Meng (University of South Carolina), Xiaochuan Fan (HERE), Xin Chen (HERE), Min Chen (UW), Yan Tong (University of South Carolina)
- EARRING: Efficient Authentication of Outsourced Record Matching Boxiang Dong (Montclair State University), Hui (Wendy) Wang (Stevens Institute of Technology)

Session B12: Knowledge Representation and Management

Chair: Sampath JAaarathna

Location: *(Connections 2)*

- GFEL: Generalized Feature Embedding Learning Using Weighted Instance Matching Eric Golinko (Florida Atlantic University), Xingquan Zhu (Florida Atlantic University)
- Accelerated Sparse Representation for Human Activity Recognition Long Cheng (Kiwii Power Technology Corporation), Yani Guan (Rensselaer Polytechnic Institute), Kecheng Zhu (Rensselaer Polytechnic Institute), Yiyang Li (Rensselaer Polytechnic Institute), Ruokun Xu (University of Wisconsin-Madison)
- A Multi-Stage Approach to Personalized Course Selection and Scheduling (Invited Paper) Tyler Morrow (Sandia National Laboratories), Ali Hurson (Missouri University of Science & Technology), Sahra Sedigh Sarvestani (Missouri University of Science & Technology)
- Colored Petri Net Representation of Logical and Decisive Passing Algorithm for Humanoid Soccer Robots Kieutran Pham (The College of New Jersey), Chelsea Cantone (The College of New Jersey),

Kieutran Pham (The College of New Jersey), Chelsea Cantone (The College of New Jersey), Seung-yun Kim (The College of New Jersey, School of Engineering)

IEEE International Workshop on Formal Methods Integration (FMi) – Part One

Chair: Thouraya Bouabana-Tebibel

Location: *(Connections 3)*

- Upgrade of HA Systems: Formal Methods at Rescue (Invited Paper) Oussama Jebbar (Concordia University, Canada), Ferhat Khendek (Concordia University, Canada) and Maria Toeroe (Ericsson, Canada)
- **Probabilistic Analysis Applied to Cleaning Robots (Regular Paper)** Rafael Araujo, Alexandre Mota and Sidney Nogueira (Federal University of Pernambuco, Brazil)
- A Symbolic Rewriting Semantics of the COMPASS Modeling Language (Regular Paper) Musab A. Alturki (King Fahd University, Saudi Arabia)
- A Phenomenal Basis for Hybrid Modelling (WIP Paper) Jon G. Hall (The Open University, UK), Lucia Rapanotti (The Open University, UK) and Georgi Markov (Siemens, USA)

Noon – 1:30 p.m. Lunch (*Compass 2*)

1:30 – 2:30 p.m. Application Sessions

Note: the presentation for application papers should be limited to 20 min including Q&A.

Session APP2: Applications: Social Media and Users

Chair: Latifur Khan

Location: (Connections 2)

- Analysis and Modeling of Unified User Interests Sampath Jayarathna (California State Polytechnic University Pomona)
- Analysis of Performance Variability in Public Cloud Computing
 Fabiana Santana (University of Canberra)
- Model-Oriented Web Service Implementations Compared to Traditional WS Thiago Gottardi (Universidade de São Paulo), Rosana Braga (Universidade de São Paulo)

Session APP3: Applications: Al and Machine Learning

Chair: Taghi Khoshgoftaar

Location: (Connections 3)

- Modified Convolutional Neural Network for Highly Effective Parallel Processing Sang-Soo Park (Hanyang University), Jung-Hyun Hong (Hanyang University), Ki-Seok Chung (Hanyang University)
- An Automated Approach for Information and Referral of Social Services using Machine Learning

Madhav Sharan (USC), Nithin Krishna (USC), Chris Mattmann (211 Los Angeles County), Karanjeet Singh (USC), Maribel Marin (211 Los Angeles County), Amy Latzer (211 Los Angeles County), Colin Foon (211 Los Angeles County), Umesh Handore (211 Los Angeles County)

• Analysis of Transfer Learning Performance Measures Karl Weiss (Florida Atlantic University), Taghi M Khoshgoftaar (Florida Atlantic University) **2:30 – 2:45 a.m.** Break Location: *(Compass 2)*

2:45 – 4:45 p.m. Sessions & Workshops

Session B2: Learning

Chair: Balaji Palanisamy

Location: (Navigator)

- Comparison of Visual Datasets for Machine Learning (Invited Paper) Kent Gauen (Purdue University), Ryan Dailey, Purdue), John Laiman (Purdue University), Yuxiang Zi (Purdue University), Nirmal Asokan (Purdue University), Yung-Hsiang Lu (Purdue University), George Thiruvathukal (Loyola University Chicago), Mei-Ling Shyu (University of Miami). Shu-Ching Chen (Florida International University)
- AAFA: Associative Affinity Factor Analysis for Bot Detection and Stance Classification in Twitter Saad Sadiq (University of Miami- Miller school of medicine), Yilin Yan (University of Miami), Asia Taylor (University of Miami), Mei-Ling Shyu (University of Miami), Shu-Ching Chen (Florida International University), Daniel Feaster (University of Miami)
- Using Weather and Playing Surface to Predict the Occurrence of Injury in Major League Soccer Games: A Case Study (Paper from Workshop on Health Informatics) Sara Landset (Florida Atlantic University), Michael F. Bergeron (SIVOTEC Analytics), Taghi M. Khoshgoftaar (Florida Atlantic University)
- Documentation Reuse: Managing Similar Documents (Oral Presentation of Poster) Stan Jarzabek (Technical University of Bialystok), Daniel Dan (Info-Software Systems ST Electronics Pte. Ltd)

The 6th IEEE International Workshop on Empirical Methods for Recognizing Inference in TExt (IEEE EM-RITE 2017)

Chairs: Min-Yuh Day, Yoshinobu Kano and Chuan-Jie Lin Location: (*Connections 2*)

- Visualization Analysis of Medical Resource Utilization for Long-term Care Services Kuo-Chung Chu (National Taipei University of Nursing and Health Sciences) and Peng-Hua Jiang (National Taipei University of Nursing and Health Sciences)
- Deep Learning for Sentiment Analysis on Google Play Consumer Review Min-Yuh Day (Tamkang University) and Yue-Da Lin (Tamkang University)
- Heuristics-Based Schema Extraction for Deep Web Query Interfaces Chichang Jou (Tamkang University) and Yucheng Cheng (Tamkang University)
- Constructing Hierarchical Product Categories for E-commerce by Word Embedding and Clustering

Yi-Hsiang Hsieh (Chaoyang University of Technology)), Shih-Hung Wu (Chaoyang University of Technology), Liang-Pu Chen (Institute for Information Industry), and Ping-Che Yang (Institute for Information Industry)

IEEE International Workshop on Formal Methods Integration (FMi) – Part Two

Chair: Thouraya Bouabana-Tebibel

Location: (Connections 3)

• On the Synthesis of Guaranteed-Quality Plans for Robot Fleets in Logistics Scenarios via Optimization Modulo Theory (Invited Paper) Francesco Leofante (RWTH Aachen University, Germany), Erika Ábrahám (RWTH Aachen

(RWTH Aachen University, Germany), Erika Abraham (RWTH Aachen University, Germany), Tim Niemueller (RWTH Aachen University, Germany), Gerhard Lakemeyer (RWTH Aachen University, Germany) and Armando Tacchella (University of Genoa, Italy)

Performance Analysis of Apache Storm Applications using Stochastic Petri Nets (Regular Paper)

Jose Ignacio Requeno (University of Zaragoza, Spain), José Merseguer (University of Zaragoza, Spain) and Simona Bernardi (Defense University Center, Spain)

 On the Verification of UML State Machine Diagrams to Colored Petri Nets Transformation using Isabelle/HOL (Regular Paper) Said Meghzili (University of Constantine 2, Algeria), Allaoua Chaoui (University of Constantine 2, Algeria), Martin Stradeor (University of Paul Schediar, Erange) and Elbilloli Kerkeyebe (University)

Algeria), Martin Strecker (University of Paul Sabatier, France) and Elhillali Kerkouche (University of Jijel, Algeria)

5:30 – 9:30 p.m. Location: *(Compass 2)* **Banquet & Awards Ceremony**

Day 3: Sunday, August 6, 2017

8:30 – 9:45 a.m. Keynote 4

Location: (Connections 1)

The Autonomous Intelligence Project

Stuart Rubin Senior Scientist, SPAWAR Systems Center Pacific (SSC-Pacific), San Diego, CA

9:45 – 10 a.m. Break Location: *(Compass 2)*

10 a.m. – Noon Industry/Gov Session & Workshop

Industry/Gov Session Chair: Chengcui Zhang Location: (Navigator)

The Challenges and Solutions for Building an Integrated Video Analytics Platform George Mathew MIT Lincoln Lab

Predicting the Users' Clickstreams Using Time Series Representation, Symbolic Sequences, and Deep Learning: Application on Job Offers Recommendation Tasks

Sidahmed Benabderrahmane Paris Dauphine University, France Myriam Lamolleb Paris 8 University, France Nedra Mellouli Paris 8 University, France

ULTR-CTR: Fast Page Grouping using URL Truncation for Real-time Click Through Rate Estimation

Hui Liu Florida Atlantic University Xingquan Zhu Florida Atlantic University Kristopher Kalish Bidtellect Inc. Jeremy Kayne Bidtellect Inc.

Session C1: Social Media and Users

Chair: **Min-Yuh Day** Location: *(Connections 2)*

• Enhancing Yelp Data with Deep Learning and Information Reuse Roberto Camacho Barranco (University of Texas at El Paso), Laura M. Rodriguez (University of Texas at El Paso), Rebecca Urbina (University of Texas at El Paso), M. Shahriar Hossain (University of Texas at El Paso)

- Estimating the Prevalence of Religious Content in Intelligent Design Social Media George Montanez (Carnegie Mellon University)
- Infusing Latent User-Concerns from User Reviews into Collaborative Filtering Ligaj Pradhan (UAB Dept. of Computer and Information Sciences), Chengcui Zhang (The University of Alabama at Birmingham), Steven Bethard (University of Arizona, USA)

IEEE First International Workshop on

Social Media Networks Analytics and Applications (SMA2) – Part One Chairs: Vincenzo Moscato and Antonio Picariello

Location: (Connections 3)

- Predicting Market Revenue using Social Media Data Steve Shim (California State University, Los Angeles, USA), Mohammad Pourhomayoun (California State University, Los Angeles, USA)
- Discovering Mobility Patterns of Instagram Users through Process Mining Techniques Claudia Diamantini (Università Politecnica delle Marche, Italy), Laura Genga (Università Politecnica delle Marche), Italy, Fabrizio Marozzo (Università della Calabria, Italy), Domenico Potena (Università Politecnica delle Marche, Italy), Paolo Trunfio (Università della Calabria, Italy)
- Modelling Multimedia Social Networks using Labelled Semantic Based Graph Antonio M. Rinaldi (Università degli Studi di Napoli "Federico II", Italy), Enrico G. Caldarola (Università degli Studi di Napoli "Federico II", Italy)
- Influence Analysis in Online Social Networks using Hypergraphs
 Flora Amato (Università degli Studi di Napoli "Federico II", Italy), Francesco Di Lillo (Università
 degli Studi di Napoli "Federico II", Italy), Vincenzo Moscato (Università degli Studi di Napoli
 "Federico II", Italy), Antonio Picariello (Università degli Studi di Napoli "Federico II", Italy),
 Giancarlo Sperlì (Università degli Studi di Napoli "Federico II", Italy)

Noon – 1:30 p.m. Lunch (*Compass 2*)

1:30 – 2:30 p.m. Application Sessions

Note: the presentation for **application papers** should be limited to 20 min including Q&A.

Session APP4: Applications: Information Reuse

Chair: **Balaji Palanisamy** Location: *(Connections 2)*

Ensemble Maximum Entropy Classification and Linear Regression for Author Age
Prediction

Joey Hong (Caltech), Chris Mattmann (211 Los Angeles County), Paul Ramirez (NASA JPL)

- Toward Semantic Search for the Biogeochemical Literature Joshua Eisenberg (Florida International University), Deya Banisakher (Florida International University), Maria Presa (Florida International University), Kalli Unthank (Florida International University), Mark Finlayson (FIU), Shu-Ching Chen (Florida International University), Rene Price (Florida International University)
- Entropy in Design Phase: a Higraph-Based Model Approach Hycham ABOUTALEB (ENSTA ParisTech)

Session APP5: Applications: Data Analytics

Chair: Sahra Sedigh Sarvestani

Location: *(Connections 3)*

- An Effective LmRMR for Financial Variable Selection and Its Applications Sara Aghakhani (University of Calgary), Reda Alhajj (University of Calgary), John Rokne (University of Calgary), Philip Chang (University of Calgary)
- Learning Profiles in Duplicate Question Detection Chakaveh Saedi (University of Lisbon), João Rodrigues (University of Lisbon), João Silva (University of Lisbon), António Branco (University of Lisbon), Vladislav Maraev (University of Lisbon)
- Modernizing Analytics for Melanoma with a Large-Scale Research Dataset Aaron Richter (Florida Atlantic University), Taghi Khoshgoftaar (Florida Atlantic University)

2:30 – 2:45 p.m. Break

Location: (Compass 2)

2:45 – 4:45 p.m Sessions & Workshop

Session C2: Classification and Processing

Chair: **Taghi Khoshgoftaar** Location: *(Connections 2)*

- Estimating Outlier Score Probabilities Richard Bauder (Florida Atlantic University), Taghi M. Khoshgoftaar (Florida Atlantic University)
- Schemaless Join for Result Set Preferences Chuancong Gao (Simon Fraser University), Jian Pei (Simon Fraser University), Jiannan Wang, SFU), Yi Chang (Huawei Research)
- Medical Provider Specialty Predictions for the Detection of Anomalous Medicare Insurance Claims Matthew Herland (Florida Atlantic University), Richard Bauder (Florida Atlantic University), Taghi
- M. Khoshgoftaar (Florida Atantic University)
 Knowledge Amplification through Randomization for Scheduling Systems
 Thouraya Bouabana-Tebibel (Ecole Nationale Supérieure d'Informatique, LCSI Laboratory,
 Algeria), Stuart Rubin (Space and Naval Warfare Systems Center Pacific, San Diego, CA, USA),
 Miled B. Bentaiba (Ecole Nationale Supérieure d'Informatique, LCSI Laboratory, Algeria),
 Abdelghani Allaoua (Ecole Nationale Supérieure d'Informatique, LCSI Laboratory, Algeria),
 Ahcène Boumhand (Ecole Nationale Supérieure d'Informatique, LCSI Laboratory, Algeria)

IEEE First International Workshop on Social Media Networks Analytics and Applications (SMA2) – Part Two Chairs: Vincenzo Moscato and Antonio Picariello

Location: (Connections 3)

- Effective Information Spreading In Social Networks Nunziato Cassavia (ICA-CNR, Italy), Elio Masciari (ICA-CNR, Italy), Domenico Sacca' (Università della Calabria, Italy)
- Measuring Polarization in Twitter Enabled in Online Political Conversation: The Case of 2016 US Presidential election Simonetta Primario (Università degli Studi di Napoli "Federico II", Italy), Dario Borrelli (Università degli Studi di Napoli "Federico II", Italy), Luca Iandoli (Università degli Studi di Napoli "Federico II", Italy), Giuseppe Zollo (Università degli Studi di Napoli "Federico II", Italy), Carlo Lipizzi (Stevens Institute of Technology, USA)
- A Survey of Online Social Networks: Challenges and Opportunities Fabio Persia (Free University of Bozen, Italy), Daniela D'Auria (Free University of Bozen, Italy)