

IEEE CIC/CogMI/TPS Joint Conferences

Day 1: Thursday, Dec 12, 2019

(Five Parallel Sessions in the Afternoon)

8am-5:30pm	Conference Registration (<i>Conference Registration Desk outside TBA</i>)				
7:30-8:30am	Informal Meet & Greet – Breakfast (Location: TBA)				
8:30-9:00am	Welcome, Conference Opening Remarks (James Joshi + TPS/CIC/CogMI chairs)				
9:00-10:00am	<p style="text-align: center;">Keynote 1 (Avalon-3rd Floor) Structuring of Unstructured Data: A Key to Automated Machine Intelligence Jiawei Han, <i>University of Illinois at Urbana-Champaign, US</i> Session Chair: Christin Seifert, <i>University of Twente, Netherlands</i></p>				
10-10:15m	Coffee Break (15 minutes) (Foyer)				
10:15am-11:45am	<p style="text-align: center;">Plenary Panel 1 (Avalon-3rd Floor) Collaboration at Edge: Edge AI and Edge Computing in 2020 Panelists (Last Name Alphabetical): Karl Aberer, <i>EPFL, Switzerland</i> M. Brian Blake, <i>George Washington, US</i> Dimitrios Georgakopoulos, <i>Swinburne University, Australia</i> Weisong Shi, <i>Wayne State University, US</i> Panel Moderator/Session Chair: Ling Liu, <i>Georgia Tech, US</i></p>				
11:45 – 12:30pm	<p style="text-align: center;">Industry Keynote 1 (Avalon-3rd Floor) Collaborating with Machines Robert Yates, <i>IBM T J Watson, US</i> Session Chair: James Joshi, <i>University of Pittsburgh, NSF, US</i></p>				
12:30pm-1:30pm	Lunch (Emerald Bay-3 rd Floor)				
1:30pm – 3:30pm	<p style="text-align: center;">CIC Session 1 Session Chair: Yang Zhou <i>Santa Monica A</i></p>	<p style="text-align: center;">CogMI Session 1 Session Chair: Gwenn Englebienne <i>Santa Monica B</i></p>	<p style="text-align: center;">TPS Session 1 Session Chair: Indrakshi Ray <i>Santa Monica C</i></p>	<p style="text-align: center;">Vision Session 1 Session Chair: Schahram Dustdar <i>Santa Monica D</i></p>	<p style="text-align: center;">Vision Session 2 Session Chair: Dimitrios Georgakopoulos <i>Hollywood</i></p>
3:30 – 4pm	Coffee (Foyer)				
4-6pm	<p style="text-align: center;">CIC Session 2 Session Chair: Julian Jarrett <i>Santa Monica A</i></p>	<p style="text-align: center;">CogMI Session 2 Session Chair: Lydia Y. Chen <i>Santa Monica B</i></p>	<p style="text-align: center;">CogMI Session 3 Session Chair: Sid Ahmed Selouani <i>Santa Monica C</i></p>	<p style="text-align: center;">Vision Session 3 Session Chair: Latifur Khan <i>Santa Monica D</i></p>	<p style="text-align: center;">Vision Session 4 Session Chair: Tarek Abdelzaher <i>Hollywood</i></p>
6 – 8 pm	Reception (Emerald Bay)				

IEEE CIC/CogMI/TPS Joint Conferences

Day 2: Friday, Dec 13, 2019

(five parallel sessions in the afternoon)

8am-5:30pm	Conference Registration (<i>Conference Registration Desk outside TBA</i>)				
7:30-8:30am	Informal Meet & Greet – Breakfast (Location: Beaudry B)				
8:30-9:30am	Keynote 2 (San Gabriel-1 st Floor) Real-world Differential Privacy: Issues and Smooth Sensitivity Solutions Christopher W. Clifton, <i>Purdue University, US</i> Session Chair: Jaideep Vaidya, <i>Rutgers university, US</i>				
9:30-10:45am	Plenary Panel 2 (San Gabriel-1 st Floor) Can Machine Learning be Private, Secure and Trusted? Panelists (<i>Last Name Alphabetical</i>): Elisa Bertino, <i>Purdue University, US</i> Murat Kantarcioglu, <i>UT Dallas, US</i> Jaideep Vaidya, <i>Rutgers university, US</i> Panel Moderator/Session Chair: James Joshi, <i>University of Pittsburgh, NSF, US</i>				
10:45-11:00am	Coffee Break (Foyer)				
11-12:30am	Plenary Panel 3 (San Gabriel-1 st Floor) Human Intelligence and Machine Intelligence: Friend or Foe Panelists (<i>Last Name Alphabetical</i>): Tarek Abdelzaher, <i>University of Illinois at Urbana Champaign, US</i> Paolo Boldi, <i>University of Milano, Italy</i> Schahram Dustdar, <i>Vienna University of Technology, Vienna</i> Huan Liu, <i>Arizona State University, US</i> Panel Moderator/Session Chair: Christin Seifert, <i>University of Twente, Netherlands</i>				
12:30-1:30pm	Lunch (Beaudry B)				
1:30 – 3:30pm	Vision Session 5 Session Chair: Jaideep Vaidya <i>San Pedro</i>	Vision Session 6 Session Chair: Zon-Yin Shae <i>Palos Verdes</i>	TPS Session 2 Session Chair: Murat Kantarcioglu <i>Santa Barbara C</i>	CIC Session 3 Session Chair: Dong Wang <i>Santa Barbara A</i>	CogMI Session 4 Session Chair: Paolo Boldi <i>Santa Barbara B</i>
3:30 – 4pm	Coffee (Foyer)				
4-6pm	Vision Session 7 Session Chair: Huan Liu <i>Palos Verdes</i>	TPS Session 3 Session Chair: David Mohaisen <i>Santa Barbara C</i>	TPS Session 4 Session Chair: Balaji Palanisamy <i>San Pedro</i>	CIC Session 4 Session Chair: Mohan B. Chhetri <i>Santa Barbara A</i>	CIC Session 5 Session Chair: Sudhanshu Gaur <i>Santa Barbara B</i>
6-8pm	CIC/CogMI/TPS Joint Banquet (Beaudry B) (Incl. Best Paper Awards from CIC/CogMI/TPS)				

IEEE CIC/CogMI/TPS Joint Conferences
Day 3: Saturday, Dec 14, 2019
(five parallel sessions in the morning)

8am-5:30pm	Conference Registration <i>(Conference Registration Desk: Location TBA)</i>			
7:30-8am	Informal Meet & Greet – Breakfast <i>(Location: Beaudry B)</i>			
8:15am - 8:30am	Opening Remarks + Announcement			
8:30-9:30am	Keynote 3 (San Gabriel-1 st Floor) Making News Credible Again Karl Aberer, EPFL, Switzerland Session Chair: Dimitrios Georgakopoulos, Swinburne University, Australia			
9:30-10:15am	Industry keynote 2 (San Gabriel-1 st Floor) Trusting Autonomous Vehicles Ashish Kundu, Nuro.ai, US Session Chair: Dimitrios Georgakopoulos, Swinburne University, Australia			
10:15-10:30am	Coffee Break (Foyer)			
10:30am-12:30pm	CIC Session 6 Session Chair: Sibel Adali <i>Santa Barbara A</i>	CogMI Session 5 Session Chair: Shaolei Ren <i>Santa Barbara C</i>	TPS Session 5 Session Chair: Amirreza Masoumzadeh <i>Palos Verdes</i>	TPS Session 6 Session Chair: Stacey Truex <i>Beaudry B</i>
12:30pm-1:30pm	Lunch (Santa Anita)			
1:30 - 3:00pm	Plenary Panel 4 (Industry) (San Gabriel-1 st Floor) From Multi-Agent Systems to Distributed AI: Research Challenges and Killer Applications Panelists (Last Name Alphabetical): Luis Garces-Erice, IBM Zurich, Switzerland Sudhanshu Gaur, Hitachi, US Ashish Kundu, Nuro, US Mudhakar Srivatsa, IBM TJ Watson, US Panel Moderator/Session Chair: Christin Seifert, University of Twente, Netherlands			
3pm-3:15pm	Closing			

IEEE CIC/CogMI/TPS Joint Conferences

Day 1: Thursday, Dec 12, 2019

Keynote 1

9am – 10am, Room Avalon (3rd Floor)

Chair: Christin Seifert, University of Twente, Netherlands

Structuring of Unstructured Data: A Key to Automated Machine Intelligence

Jiawei Han, *University of Illinois at Urbana-Champaign, US*

Coffee Break

10am – 10:15am, Foyer

Plenary Panel 1 (CIC)

10:15am – 11:45am, Room Avalon (3rd Floor)

Collaboration at Edge: Edge AI and Edge Computing in 2020

Moderator: Ling Liu, *Georgia Institute of Technology, US*

Panelists: (order by last name)

- Karl Aberer, *Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland*
- M. Brian Blake, *George Washington, US*
- Dimitrios Georgakopoulos, *Swinburne University, Australia*
- Weisong Shi, *Wayne State University, US*

Industry Keynote

11:45am – 12:30pm, Avalon (3rd Floor)

Chair: James Joshi, University of Pittsburgh, NSF, US

Collaborating with Machines

Robert Yates, *Distinguished Engineer, IBM, US*

Lunch

12:30pm – 1:30pm, Emerald Bay (3rd Floor)

CIC Session 1: Collaborative Learning and Problem Solving

1:30pm – 3:30pm, Room Santa Monica A

Session Chair: Yang Zhou (Auburn University)

- **Airport Restroom Cleanliness Prediction Using Real Time User Feedback Data**

Kilian Ros, Elena Mocanu and Christin Seifert (University of Twente, Netherlands)

- **Collaborative Creation and Training of Social Bots in Learning Communities**
Alexander Tobias Neumann, Peter de Lange and Ralf Klamma (RWTH Aachen University, Germany)
- **Sharing Blockchain Performance Knowledge for Edge Service Development**
Filip Rydzy (Independent, Slovakia) and Hong-Linh Truong (Aalto University, Finland)
- **A solving method for computing and network resource minimization problem in service function chain against Multiple VNF Failures**
Daiki Yamada and Norihiko Shinomiya (Soka University of Japan, Japan)

CogMI Session 1: Cognitive Learning with Domain Knowledge

1:30pm – 3:30pm, Room Santa Monica B

Session Chair: Gwenn Englebienne (University of Twente, Netherlands)

- **Machine Learning and Human Cognition Combined to Enhance Knowledge Discovery Fidelity**
Salim Chujfi and Christoph Meinel (Hasso Plattner Institute, Germany)
- **GRAHIES: Multi-Scale Graph Representation Learning with Latent Hierarchical Structure**
Lei Yu (IBM Research, US), Ling Liu, Calton Pu, Ka Ho Chow, Emre Gursoy, Stacey Truex, (Georgia Institute of Technology, US) Hong Min, Arun Iyengar, Gong Su, Qi Zhang and Donna Dillenberger (IBM Research, US)
- **Self-adaptive tuning for speech enhancement algorithm based on evolutionary approach**
Ryan Leblanc and Sid Ahmed Selouani (Université de Moncton, Canada)
- **Robust, Extensible, and Fast: Teamed Classifiers for Vehicle Tracking in Heterogeneous Many-Camera Networks**
Abhijit Suprem, Rodrigo Alves Lima (Georgia Institute of Technology, US), Bruno Padilha (University of São Paulo, Brazil), Calton Pu (Georgia Institute of Technology, US) and Joao Eduardo Ferreira (University of São Paulo, Brazil)

TPS Session 1: Trust, Security, and Privacy of Machine Learning

1:30pm – 3:30pm, Room Santa Monica C

Session Chair: Indrakshi Ray (Colorado State University)

- **Safety and Consistency of Mutable Attributes Using Quotas: A Formal Analysis**
Mehrnoosh Shakarami and Ravi Sandhu (University of Texas at San Antonio, US)
- **Z Table: Cost-Optimized Attack on Reinforcement Learning**
Ian Garrett and Ryan Gerdes (Virginia Tech, US)
- **Diggi: A Secure Framework for Hosting Native Cloud Functions with Minimal Trust**
Anders Tungeland Gjerdrum, Håvard Dagenborg Johansen, Lars Brenna and Dag Johansen (UIT: The Arctic University of Norway, Norway)
- **An Intelligent Behavior-Based Ransomware Detection System for Android Platform**

Abdulrahman Alzahrani (Oakland University, US), Hani Alshahrani (Najran University, Saudi Arabia), Ali Alshehri and Huirong Fu (Oakland University, US)

Vision Session 1: Quality and Reliability of Machine Intelligence

1:30pm – 3:30pm, Room Santa Monica D

Session Chair: Schahram Dustdar, Vienna University of Technology, Vienna, Austria

- **On Urban Event Tracking from Online Media: A Social Cognition Perspective**
Tarek Abdelzaher (*University of Illinois at Urbana-Champaign, US*)
- **How Network Analysis Can Improve the Reliability of Modern Software Ecosystems**
Paolo Boldi (*University of Milan, Italy*)
- **Towards Generating Consumer Labels for Machine Learning Models**
Christin Seifert (*University of Twente, Netherlands*), Lena Wiese (*OTH Regensburg, Germany*) and Stefanie Scherzinger (*Fraunhofer Institute for Toxicology and Experimental Medicine (ITEM), Germany*)
- **Random Sampling Deep Learning Mechanism for Discovering Unique Property of No Specific Local Feature Images**
Zon-Yin Shae, Zhi-Ren Tsai, Chi-Yu Chang and Jeffrey Tsai (*Asia University, Taiwan*)

Vision Session 2: AI and Internet of Things

1:30 – 3:30pm, Room Hollywood

Session Chair: Dimitrios Georgakopoulos (*Swinburne University of Tehcnology, Australia*)

- **Secure Real-Time Heterogeneous IoT Data Management System**
Md Shihabul Islam, Harsh Verma, Latifur Khan and Murat Kantarcioglu (*The University of Texas at Dallas, US*)
- **AI, IoT, and Robotics: Connecting Millennials and Manufacturing**
Sudhanshu Gaur, Joydeep Acharya and Yasutaka Serizawa (*Hitachi, US*)
- **Proactive Antifragility for Service-Oriented IoT/Edge-Computing Systems: A Vision and Outline of Research Directions**
Anton V. Uzunov, Surya Nepal and Mohan Baruwat Chhetri (*CSIRO, Australia*)
- **On the use of Operations Research for Decision Making with Uncertainty for IoT devices in battlefield situations**
Dawn A. Lott (*Delaware State University*), Adrienne J Raglin (*Army Research Lab*), and Somiya Metu (*Army Research Lab*)

Coffee Break

3:30 – 4pm, Foyer

CIC Session 2: Collaborative Learning

4pm – 6pm, Room Santa Monica A

Session Chair: Julian Jarrett (Drexel University, US)

- **Benchmarking for end-to-end QoS sustainability in Cloud-hosted Data Processing Pipelines**
Sunil Singh Samant (Swinburne University of Technology, Australia), Mohan Baruwal Chhetri (CSIRO, Australia), Bao Vo, Ryszard Kowalczyk (Swinburne University of Technology, Australia) and Surya Nepal (CSIRO, Australia)
- **Challenges and Approaches to Teaching Data Science Technologies in an Information Technology Program with Non-traditional Students**
Richard Price (Georgia Gwinnett College, US) and Lakshmish Ramaswamy (University of Georgia, US)
- **An Interactive Play Environment on Mathematics and Cognitive Training with Behavioral Tracking for Children with Autism**
Pinata Winoto (Wenzhou-Kean University, China), Jie Chen (Columbia University, US), Hangzhi Guo and Tiffany Tang (Wenzhou-Kean University, China)

CogMI Session 2: Cognitive Machine Intelligence and Applications

4pm – 6pm, Room Santa Monica B

Session Chair: Lydia Y. Chen (Delft University of Technology, Netherlands)

- **Cognitive Identity Management: Risks, Trust and Decisions using Heterogeneous Sources**
Svetlana Yanushkevich (University of Calgary, Canada), Gareth Howells (University of Kent, UK), Keeley Crockett, James O'Shea, (Manchester Metropolitan University, UK), Helder C. R. Oliveira (University of Calgary, Canada), Richard Guest (University of Kent, UK) and Vlad Shmerko (University of Calgary, Canada)
- **Deep Heterogeneous Social Network Alignment**
Lin Meng, Yuxiang Ren, Jiawei Zhang (Florida State University, US), Fanghua Ye (University College London, UK) and Philip S. Yu (University of Il
- **Approximate Deep Network Embedding for Mining Large-scale Graphs**
Yang Zhou (Auburn University, US) and Ling Liu (Georgia Institute of Technology)
- **#Selfharm on Instagram: Quantitative Analysis and Classification of Non-Suicidal Self-Injury**
Lei Xian, Samuel D. Vickers, Amanda L. Giordano, Jaewoo Lee, In Kee Kim, and Lakshmish Ramaswamy (University of Georgia, US)

CogMI Session 3: Supervised and Unsupervised Learning

4pm – 6p, Room Santa Monica C

Session Chair: Sid Ahmed Selouani (Université de Moncton, Canada)

- **Cluster-based anonymization of directed graphs**

Tu Hoang, Barbara Carminati and Elena Ferrari (University of Insubria, Italy)

- **Annete: An Intelligent Tutoring Companion Embedded into the Eclipse IDE**
Melissa Day, Manohara Rao Penumala and Javier Gonzalez-Sanchez (Arizona State University, US)
- **Acute Mental Stress Measurement using Brain-IoT System**
Bhagyashree Shirke, Jonathan Wong and Kiran George (California State University Fullerton, US)
- **Multimodal models for contextual affect assessment in real-time** [CogMI short paper]
Jordan Vice (Curtin University, Australia), Masood Mehmood Khan (Curtin University of Technology, Australia) and Svetlana Yanushkevich (University of Calgary, Canada)
- **Classification of Space Objects Using Machine Learning Methods** [CogMI short paper]
Mahmoud Khalil, Elena Fantino and Panos Liatsis (Khalifa University, United Arab Emirates)

Vision Session 3: Security & Privacy in Internet of Smart Things

4pm – 6pm, Room Santa Monica D

Session Chair: Latifur Khan (The University of Texas at Dallas, US)

- **IoT Security - A Comprehensive Life Cycle Framework [CIC version paper]**
Elisa Bertino (Purdue University, US)
- **Device Identity and Trust in IoT-sphere Forsaking Cryptography**
Indrajit Ray (Colorado State University & NSF), Diptendu Kar, Jordan Peterson, Steve Goeringer (Colorado State University)
- **Central Attribute Authority (CAA): A Vision for Seamless Sharing of Organizational Resources**
Saptarshi Das, Shamik Sural (IIT Kharagpur, India), Jaideep Vaidya, and Vijay Atluri (Rutgers University, US)
- **Securing Big Data in the Age of AI**
Murat Kantarcioglu and Fahad Shaon

Vision Session 4: Collaborative Intelligence for IoT Systems and Applications

4pm – 6pm, Room Hollywood

Session Chair: Tarek Abdelzaher (*University of Illinois at Urbana-Champaign, US*)

- **A Global IoT Device Discovery and Integration Vision**
Dimitrios Georgakopoulos, (*Swinburne University of Tehcnology, Australia*)
- **Engineering Heterogeneous Internet of Things Applications: From Models to Code**
Thomas W. Puzstai, Christos Tsigkanos and Schahram Dustdar, (*Vienna University of Technology, Austria*)
- **Smart CCR IoT: Internet of Things Testbed**
Adrienne Raglin (*US Army Research Laboratory, US*), Dijiang Huang, Huan Liu and James McCabe (*Arizona State University, US*)

- **A Marauder's Map for the IoT Edge**
Eve Schooler, David Zage, Hassnaa Moustafa and Jeff Sedayao, (*Intel, US*)

Day 2: Friday, Dec. 13, 2019

Keynote 2 (TPS)

8:30 – 9:30 am Room San Gabriel (1st Floor)
Session Chair: Jaideep Vaidya, *Rutgers university, US*

Real-world Differential Privacy: Issues and Smooth Sensitivity Solutions
Christopher W. Clifton, *Purdue University, US*

Plenary Panel 2 (TPS)

9:30 – 10:45am, Room San Gabriel (1st Floor)

Can Machine Learning be Private, Secure and Trusted?

Moderator: James Joshi, NSF & University of Pittsburgh, US

Panelists: (order by last name)

- Elisa Bertino, Purdue University, US
- Murat Kantarcioglu, UT Dallas, US
- Jaideep Vaidya, Rutgers University, US

Coffee Break

10:45 am – 11 am, Foyer

Plenary Panel 3 (CogMI)

11am – 12:30pm, Room San Gabriel (1st Floor)

Human Intelligence and Machine Intelligence: Friend or Foe?

Moderator: Christin Seifert, University of Twente, Netherlands

Panelists: (order by last name)

- Tarek Abdelzaher, University of Illinois at Urbana Champaign, US
- Paolo Boldi, University of Milano, Italy,
- Schahram Dustdar, Vienna University of Technology, Vienna, Austria
- Huan Liu, Arizona State University

Lunch Break

12:30 – 1:30pm, Room Beaudry B

CIC Session 3: Collaborative Intelligence

1:30pm – 3:30pm, Room Santa Barbara A

Session Chair: Dong Wang (University of Notre Dame, US)

- **Where Did the Political News Event Happen? Primary Focus Location Extraction in Different Languages**
Maryam Bahojb Imani, Latifur Khan and Bhavani Thuraisingham (The University of Texas at Dallas, US)
- **A Taxonomy for Classifying User Group Activity in Online Political Discourse**
Julian Jarrett, Kimberley Hemmings-Jarrett (Drexel University, US) and M Brian Blake (George Washington, US)
- **SciBlock: A Blockchain-Based Tamper-Proof Non-Repudiable Storage for Scientific Workflow Provenance**
Dinuni Fernando, J. Dinal Herath, (SUNY Binghamton, US) Changxin Bai (Wayne State University, US), Ping Yang, Guanhua Yan (SUNY Binghamton, US) and Shiyong Lu (Wayne State University, US)

CogMI Session 4: Learning and Machine Intelligence

1:30-3:30pm, Room Santa Barbara B

Session Chair: Paolo Boldi, University of Milano, Italy

- **Sensory Audio Focusing Detection Using Brain Computer Interface Archetype**
Ryan Villanueva, Brandon Hoang, Urmil Shah, (California State University Fullerton, US) Yazmin Martinez (University of Nevada, US) and Kiran George (California State University Fullerton, US)
- **Creating Cyber Deception Games**
Maxine Major (Naval Information Warfare Center Pacific, US), Kimberly Ferguson-Walter (Laboratory of Advanced Cybersecurity Research, US), Sunny Fugate and Justin Mauer (Naval Information Warfare Center Pacific, US)
- **Deployment of Deep Learning Models to Mobile Devices for Spam Classification [short paper]**
Ameema Zainab, Dabeeruddin Syed (Texas A&M University, US) and Dena Al-Thani (Hamad bin Khalifa University, Qatar)
- **A2Text-Net: A Novel Deep Neural Network for Sarcasm Detection**
Liyuan Liu, Jennifer Priestley, Yiyun Zhou, Herman Ray and Meng Han (Kennesaw State University, US)

TPS Session 2: Security and Privacy for Edge AI and IoT

1:30 – 3:30pm, Room Santa Barbara C

Session Chair: Murat Kantarcioglu (The University of Texas at Dallas, US)

- **Disincentivizing Double Spend Attacks Across Interoperable Blockchains**
Kuheli Sai and David Tipper (University of Pittsburgh, US)
- **Design and Implementation of Privacy-Preserving, Flexible and Scalable Role-based Hierarchical Access Control**
Tyler Phillips, Xiaoyuan Yu, Brandon Haakenson and Xukai Zou (Indiana University-Purdue University Indianapolis, US)
- **ComplexIoT: Behavior-based Trust for IoT Networks**
Kyle Heafner and Indrakshi Ray (Colorado State University, US)
- **An RNS Implementation of the Elliptic Curve Cryptography for IoT Security**
Jai Gopal Pandey (CSIR, India), Chhavi Mitharwal (Banasthali University, India) and Abhijit Karmakar (CSIR, India)

Vision Session 5: Secure ML on the Edge

1:30pm – 3:30pm, Room San Pedro

Session Chair: Jaideep Vaidya (Rutgers University, US)

- **Malware Containment in Cloud**
Abhishek Malvankar, Joshua Payne, Karan Budhraj, Ashish Kundu, Suresh Chari and Mueksh Mohania (Nuro, US)
- **Trustworthy Misinformation Mitigation with Soft Information Nudging**
Benjamin D. Horne, Mauricio Gruppi and Sibel Adali (Rensselaer Polytechnic Institute, US)
- **Robust (Deep) Learning Models Against Dirty Labels**
Amirmasoud Ghiassi, Taraneh Younesian (Delft University of Technology, Netherlands), Zilong Zhao (University of Grenoble, France), Robert Birke (ABB Research, Switzerland), Valerio Schiavoni (University of Neuchatel, Switzerland) and Lydia Y. Chen (Delft University of Technology, Netherlands)
- **Computer Systems Have 99 Problems, Let's Not Make Machine Learning Another One**
David Mohaisen (University of Central Florida, US) and Songqing Chen (George Mason University, US)

Vision Session 6: Next Generation Collaboration

1:30-3:30pm, Room Palos Verdes

Session Chair: Zon-Yin Shae (*Asia University, Taiwan*)

- **Toward Autonomy: Symbiotic Formal and Statistical Machine Reasoning**
J. Sukarno Mertoguno (Georgia Tech Research Institute, US)
- **Building Explainable Data Analytics for Location-Dependent Time-Series Data**
Yao-Yi Chiang, Yijun Liu, Meredith Franklin (University of Southern California, US) and Wei-Shinn Ku (Auburn University, US)

- **Self-emerging Data Infrastructures**
Balaji Palanisamy (University of Pittsburgh, US) and Chao Li (Beijing Jiaotong University, China)
- **Empathy, Privacy and Ethics for the Next Generation of Smart Built Environments**
Denis Gracanin (Virginia Tech, US), Ramoni Lasisi, Mohamed Azab and Mohamed Eltoweissy (Virginia Military Institute, US)

Coffee Break

3:30pm – 4pm, Foyer

CIC Session 4 Collaborative Analysis, Design and Management

4pm – 6pm, Room Santa Barbara A

Session Chair: Mohan Baruwal Chhetri (CSIRO, Australia)

- **Experiences with Managing Data Ingestion into a Corporate Datalake**
Sean Rooney, Daniel Bauer, Luis Garcés-Erice, Peter Urbanetz, Florian Froese, and Sasa Tomic (IBM Research, Switzerland)
- **Leveraging Data-Analysis Session Logs for Efficient, Personalized, Interactive View Recommendation**
Xiaozhong Zhang, Xiaoyu Ge and Panos Chrysanthis (University of Pittsburgh, US)
- **ActionTime: Help Children Develop Execution Skills**
Cui Yu (Monmouth University, US), Allen Lu (High Technology High School, US), Steven Cassidy and Wenjin Zhang (Monmouth University, US)
- **Collaborative Online Educational Games for Children with Learning Disabilities: Lessons Learned**
Pinata Winoto and Tiffany Tang. (Wenzhou-Kean University, China)

CIC Session 5: Collaborative Learning and Applications I

4pm – 6pm, Room Santa Barbara B

Session Chair: Sudhanshu Gaur (Hitachi, US)

- **Provider Networks in the Neonatal Intensive Care Unit Affect Length of Stay**
Cindy Kim, Christoph U. Lehmann, Jonathan S. Schildcrout, Dupree Hatch, Dan France and You Chen (Vanderbilt University, US)
- **Temporal JSON**
Aayush Goyal and Curtis Dyreson. (Utah State University, US)
- **Tabu Search for Efficient Service Function Chain Provisioning in Fog Networks**
Nazli Siasi (University of South Florida, US), Adrian Jaesim (University of Mount Union, US) and Nasir Ghani (University of South Florida, US)

- **An Assessment of the Impacts of Workflow Management Systems on Knowledge Management Process Activities**
Ricardo Anderson (University of the West Indies, Jamaica)

Vision Session 7: Cognitive Machine Intelligence

4:00 – 6:00pm, Room Palos Verdes

Session Chair: Huan Liu (*Arizona State University, US*)

- **Automating Deep Neural Network Model Selection for Edge Inference**
Bingqian Lu, Jianyi Yang (University of California Riverside, US), Lydia Y. Chen (Delft University of Technology, Netherlands) and Shaolei Ren (University of California Riverside, US)
- **Detection Perceived Appropriateness of a Robot's Social Positioning Behavior from Non-Verbal Cues**
Jered Vroon (Delft University of Technology, Netherlands), Gwenn Englebienne (University of Twente, Netherlands) and Vanessa Evers (Nanyang Technological University, Singapore)
- **Social Edge Intelligence: Integrating Human and Artificial Intelligence at the Edge**
Dong Wang, Yue Zhang, Yang Zhang, Md Tahmid Rashid, Lanyu Shang and Na Wei (University of Notre Dame, US)
- **Online Intelligent Music Recommendation: The Opportunity and Challenge for IR Research**
Jerry Jialie Shen (Queen's University, UK)

TPS Session 3: Security and Privacy in Machine Learning

4pm – 6pm, Room Santa Barbara C

Session Chair: David Mohaisen (University of Central Florida, US)

- **Towards Deep Federated Defenses Against Malware in Cloud Ecosystems**
Joshua Payne (Stanford University, US) and Ashish Kundu (IBM TJ Watson, US)
- **Effects of Differential Privacy and Data Skewness on Membership Inference Vulnerability**
Stacey Truex, Ling Liu, Emre Gursoy, Wenqi Wei, and Lei Yu (Georgia Institute of Technology, US)
- **Machine Learning and Recognition of User Tasks for Malware Detection**
Yasamin Alagrash, Nithasha Mohan, Sandhya Rani Gollapalli and Julian Rrushi (Oakland University, US)
- **Twitter Bot Detection Using Bidirectional Long Short-term Memory Neural Networks and Word Embeddings**
Feng Wei and Uyen Trang Nguyen (York University, Canada)

TPS Session 4: Security and Privacy by Design

4pm - 6pm, Room San Pedro

Session Chair: Balaji Palanisamy (University of Pittsburgh, US)

- **Countering Malware Via Decoy Processes with Improved Resource Utilization Consistency**
Sara Sutton, Sementa Tahiri, Benjamin Bond and Julian Rrushi (Oakland University, US)
- **Analysis and Nudging of Personally Identifiable Information in Online Used Markets**
Hyunsu Mun and Youngseok Lee (Chungnam National University, South Korea)
- **A Performance Evaluation: When Encryption Applied in CAN protocol [application paper]**
Hanlin Chen and Baijian Yang (Purdue University, US)
- **Towards Applying Design-Thinking for Designing Privacy Protecting Information Systems [Short Paper]**
Mortaza S. Bargh and Sunil Choenni (WODC, Ministry of Justice and Security, Netherlands)
- **Contextualizing Consensus Protocols in Blockchain: A Short Survey [Short Paper]**
Golam Bashar, Graham Hill, Praneeth Praneeth Babu Marella, Subroto Singha, Gaby G. Dagher and Jidong Xiao (Boise State University, US)

Day 3: Saturday, Dec. 14, 2019

Keynote 3

8:30am – 9:30 am, Room Gabriel (1st Floor)

Chair: Dimitrios Georgakopoulos, Swinburne University, Australia

Making News Credible Again

Karl Aberer, EPFL, Switzerland

Industry Keynote 2

9:30-10:15am, Room Gabriel (1st Floor)

Chair: Dimitrios Georgakopoulos, Swinburne University, Australia

Trusting Autonomous Vehicles

Ashish Kundu, Nuro.ai, US

Coffee Break

10:15am – 10:30am, Foyer

CIC Session 6: Collaborative Learning and Applications II

10:30am - 12:30pm, Room Santa Barbara A

Session Chair: Sibel Adali (RPI, US)

- **Two Tier Analysis of Social Media Collaboration for Student Migration**
Ronak Razavisousan and Karuna Joshi (University of Maryland Baltimore County, US)

- **Event Detection in Noisy Streaming Data with Combination of Corroborative and Probabilistic Sources**
Abhijit Suprem and Calton Pu (Georgia Institute of Technology, US)
- **Integration of User Emotion and Self-Awareness in Text Messaging**
Li Liu (California State University, US), Dragos Guta (NASA, US) and Shuo Niu (Clark University, US)
- **Named Entity Recognition for Nepali Language with Grapheme Convolution Network**
Oyesh Singh, Ankur Padia and Anupam Joshi (University of Maryland Baltimore County, US)

CogMI Session 5: Cognitive Learning and Applications

10:30am – 12:30pm, Room Santa Barbara C

Session Chair: Shaolei Ren (University of California Riverside, US)

- **Discovery of Action Rules for Continuously Valued Data**
Tom Johnsten, Wyatt Green, Lowell Crook, Ho Yin Chan, Ryan Benton and David Bourrie (University of South Alabama, US)
- **Perennial, Permuted, and Pervasive Search in Ambient Intelligence**
Javed Mostafa (University of North Carolina), Xiaopeng Lu (Carnegie Mellon University) and Sandeep Avula (University of North Carolina)
- **Fractal Base Antennas Effects on Wi-Fi Harvesting Technologies** [short paper]
Riken Parekh and Kiran George (California State University Fullerton, US)
- **Benchmarking Contemporary Deep Learning Hardware and Frameworks: A Survey of Qualitative Metrics** [short paper]
Wei Dai (Southeast Missouri State University, US) and Daniel Berleant (University of Arkansas at Little Rock, US)
- **Applying Software Design Metrics to Developer Story: A Supervised Machine Learning Analysis** [short paper]
Asaad Algarni and Kenneth Magel (North Dakota State University, US)

TPS Session 5: Secure and Trusted Cyber-Space

10:30am – 12:30pm, Room Palos Verdes

Session Chair: Amirreza Masoumzadeh (University at Albany, US)

- **Blockchain-based Redistricting Evaluation Protocol**
Naresh Adhikari, Naila Bushra and Mahalingam Ramkumar (Mississippi State University, USA)
- **Secure Queryable Dynamic Graphs Using Blockchains**
Naila Bushra, Naresh Adhikari and Mahalingam Ramkumar (Mississippi State University, USA)

- **Data Siphoning Across Borders: The Role of Internet Tracking**
Ashwini Rao and Juergen Pfeffer (Technical University of Munich, Germany)
- **Open-TEE is No Longer Virtual: Towards Software-only Trusted Execution Environments Using White-box Cryptography**
Kemal Bicakci, Ihsan Kagan Ak (TOBB University of Economics and Technology, Turkey), Betul Askin Ozdemir (Middle East Technical University, Turkey) and Mesut Gozutok (Havelsan Inc., Turkey)

TPS Session 6: Security and Privacy by Design

10:30am - 12:30pm, Room Beaudry B

Session Chair: Stacey Truex, (Georgia Institute of Technology, US)

- **Factoring RSA Keys in the IoT Era [Short Paper]**
Jonathan Kilgallin and Ross Vasko (Keyfactor, US)
- **User Acceptance of Usable Blockchain-Based Research Data Sharing System: An Extended TAM-Based Study [Short Paper]**
Ajay Shrestha and Julita Vassileva (University of Saskatchewan, Canada)
- **SERS: A Security-related and Evidence-based Ranking Scheme for Mobile Apps**
Nahida Sultana Chowdhury and Rajeev R. Raje (Indiana University-Purdue University Indianapolis, US)

Workshop AI4CyberSec

Session Chair: Workshop AI4CyberSec Chairs:

Dr. Min Song, Stevens Institute of Technology, USA

Dr. Danda B Rawat, Howard University, Washington DC, USA

- **Artificial Intelligence empowered Cyber Threat Detection and Protection for Power Utilities [AI4CyberSec]**
Kamrul Hasan, Sachin Shetty, Sharif Ullah (Old Dominion University, USA)
- **A Robust Malware Detection Approach for Android System against Adversarial Example Attacks [AI4CyberSec]**
Wenjia Li, Neha Bala, Aemun Ahmar, Fernanda Tovar, Arpit Battu, Prachi Bambarkar (New York Institute of Technology, US)

Lunch Break

12:30pm – 1:30pm, Room Santa Anita

Industry Plenary Panel

1:30pm – 3 pm, Room San Gabriel (1st Floor)

From Multi-Agent Systems to Distributed AI: Research Challenges and Killer Applications

Moderator: Christin Seifert, University of Twente, Netherlands

Panelists: (order by last name)

- Luis Garces-Erice, IBM Zurich
- Ashish Kundu, Nuro.ai, US
- Sudhanshu Gaur, *Hitachi, US*
- Mudhakar Srivatsa, *IBM TJ Watson, US*

Closing

3pm – 3:15pm

Session Chair: Christin Seifert (University of Twente, Netherlands)

IEEE 2019 CIC/CogMI/TPS Workshop Program

December 13, 2019	
8am-5:30pm	Registration <i>(Registration Desk outside)</i>
7:30-8:30am	Informal Meet & Greet – Breakfast <i>(Location: Beaudry B)</i>
8:30-9:15am	Workshop 1: HACS Session 1 Welcoming and Discussion: State of the Field Session Chair: L Jean Camp / Marthie Grobler
1:30 – 3:30pm	Workshop 1: HACS Session 2 Session Chair: Marthie Grobler <i>San Bernardino</i>
3:30 – 4pm	Coffee
4-6pm	Workshop 1: HACS Session 2 Session Chair: L Jean Camp <i>San Bernardino</i>
6-8pm	CIC/CogMI/TPS Joint Banquet (Beaudry B)
December 14, 2019	
8am-5:30pm	Registration <i>(Registration Desk outside)</i>
7:30-8:30am	Informal Meet & Greet – Breakfast <i>(Location: Beaudry B)</i>
11:30-12:30pm	Workshop 2: AI4CyberSec At the end of TPS session 6 <i>(Location: Beaudry B)</i>
12:30-3:30pm	See IEEE CIC/CogMI/TPS main program

Workshop 1: HACS (Dec. 13)

Welcome

8:30 – 9:30 am

Session Chair: L Jean Camp and Marthie Grobler

Welcoming and Discussion: State of the Field

Session 1

1:30pm - 3:30pm, Room San Bernardino

Session Chair: Marthie Grobler, Data61/CSIR, Australia

- **Invited paper: Designing for Fallible Humans**
Jelena Mirkovic and Simon Woo
- **Security Mandates are Pervasive: An Inter-School Study on Analyzing User Authentication Behavior**
Sanchari Das, Andrew Kim, Shrirang Mare, Joshua Streiff, Dominique Clark and L. Jean Camp
- **Towards a trusted marketplace for wearable data**
Alan Colman, M Javed Morshed Chowdhury and Mohan Baruwal Chhetri

3:30pm - 4pm Break

Session 2

4pm – 6pm, Room San Bernardino

Session Chair: L Jean Camp, Indiana University, USA

- **Overpowered and Underprotected Toys: Empowering Parents with Tools to Protect Their Children**
Joshua Streiff and Sanchari Das
- **Fuzzy Logic Application to Link National Culture and Cybersecurity Maturity**
Jongkil Jeong, Marthie Grobler, Pathum Chamikara Mahawaga Arachchige and Carsten Rudolph
- **Towards an Improved Understanding of Human Factors in Cybersecurity**
Jongkil Jeong, Joanne Mihelcic, Gillian Oliver and Carsten Rudolph
- **The World (of CTF) is Not Enough: Lessons Learned from a Cyber Deception Experiment**
Kimberly Ferguson-Walter, Maxine Major, Dirk van Bruggen, Sunny Fugate and Robert Gutzwiller

Workshop 2: AI4CyberSec (Dec. 14)

Day 14 11:30am - 12:30pm

Session chair: AI4CyberSec workshop chair

Location: same as the TPS session 6

- **Artificial Intelligence empowered Cyber Threat Detection and Protection for Power Utilities [AI4CyberSec]**
Kamrul Hasan, Sachin Shetty, Sharif Ullah (Old Dominion University, USA)
- **A Robust Malware Detection Approach for Android System against Adversarial Example Attacks [AI4CyberSec]**
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