31st International Conference on
Computer Applications In
Industry And Engineering
(CAINE 2018)

PROGRAM

October 8-10, 2018

Holiday Inn Downtown Superdome
New Orleans, USA

Sponsored by

International Society for
Computers and Their Applications

P.O. Box 1124
Winona, MN  55987
Phone: (507) 458-4517; E-mail: isca@isca-hq.org; website: www.isca-hq.org
# 31st International Conference on Computer Applications in Industry And Engineering (CAINE 2018)

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International Society for Computers and Their Applications (ISCA)

**Conference Chair:**  
Dr. Gongzhu Hu, Central Michigan University, USA

**Program Chairs:**  
Dr. Yan Shi, University of Wisconsin-Platteville, USA  
Dr. Takaaki Goto, Ryutsu Keizai University, Japan

**International Program Committee**

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<th>Name</th>
<th>Institution</th>
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<td>Abdullah Al-Shoshan</td>
<td>Qassim University, Saudi Arabia</td>
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<td>Czech Technical University in Prague, Czech Republic</td>
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<td>Haesun Lee</td>
<td>The University of Texas of the Permian Basin, USA</td>
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<td>Ilhyun Lee</td>
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<td>Rovi Corporation, USA</td>
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<td>University of Lethbridge, Canada</td>
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<td>Yan Zhuang</td>
<td>University of Macau, China</td>
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Monday, October 8, 2018

8:00 a.m. – 3:30 p.m.   REGISTRATION
8th floor Lobby
8:00 a.m. – 9:00 a.m.   Coffee, Tea and Pastries
8th floor Lobby

8:40 a.m. – 9:00 a.m.   WELCOME
Bayou Ballroom A, 8th floor
Gongzhu Hu, CAINE Conference Chair
Frederick Harris, SEDE Conference Chair

9:00 a.m. – 10:00 a.m.   KEYNOTE SPEAKER

Dr. Qiang Zhu
University of Michigan-Dearborn, USA
"Similarity Searches on Non-ordered Discrete Data for Emerging Computer Applications: Why and How"
Location: Bayou Ballroom A, 8th floor
Session Chair: Yan Shi, University of Wisconsin-Platteville

10:00 a.m. – 10:30 a.m.   COFFEE BREAK
8th floor Lobby

SESSION 1:

1. Composition of Cyberattack Models
Katia Mayfield (Athens State University), Mikel D. Petty, John A. Bland, and Tymaine S. Whitaker (University of Alabama in Huntsville)

2. Cybersecurity for Industrial Control Systems: Progress and Challenges
James Graham (True Secure SCADA), Jeffrey Hieb, Patricia Ralston (University of Louisville)

3. Dynamic Load Balancing in Heterogeneous Computing Systems With Central-Server Node Model
Satish Penmatsa (Framingham State University) and Gurdeep Hura (University of Maryland Eastern Shore)

4. Reliable Multicast Protocol Using Infiniband Remote Direct Memory Access
Shah Mansoor and J. Michael Meehan (Western Washington University)

12:00 p.m. – 1:30 p.m.   LUNCH BREAK ON YOUR OWN
SESSION 2:

MACHINE LEARNING ALGORITHMS
Monday October 8, 1:30 p.m. – 3:30 p.m., Bayou Ballroom A, 8th floor
Session Chair: Takaaki Goto (Ryutsu Keizai University)

1. Estimation of Correlation between Multiple Parameters and Sleep Satisfaction Using Deep Neural Network for Pleasant Sleeping Support System
   Seung-II Cho, Muneki Yasuda, Minami Tsuchiya, Tomochika Harada, Atsushi Tanaka and Michio Yokoyama (Yamagata University, Japan)

2. A Three-Stage Object Detection Framework Using Compact Features and Deep CNN
   Liang Peng (Oath Inc.) and Hao Qian

3. Real-time Action Recognition with Deep Features and Dissimilarity-based Training of Specialized Module Networks
   Marian Boktor, Ahmad Al-Kabbany, Radwa Khalil (Arab Academy for Science, Technology and Maritime Transport) and Said El-Khamy (Alexandria University)

4. A Seed Segmentation Contour Generator and Counter
   Chaney Courtney and Mitchell Neilsen (Kansas State University)

3:00 p.m. – 3:30 p.m. COFFEE BREAK

SESSION 3:

ARTIFICIAL INTELLIGENCE: APPLICATIONS
Monday October 8, 3:30 p.m. – 5:00 p.m., Bayou Ballroom A, 8th floor
Session Chair: Yan Shi (University of Wisconsin-Platteville)

1. Automatic Red-Eye Detection in Consumer Photographs
   Liang Peng (Oath Inc.) and Hao Qian

2. Towards Modeling Gestures for Non-Emotional Conversational Interaction by Humanoid Robots
   Aditi Singh and Arvind Bansal (Kent State University)

3. Proximal Search of Image Segments in CBIR
   Umer Rashid (Quaid-i-Azam University, Pakistan), Muhammad Afzal Bhatti (University of Wah, Pakistan), and Mubashar Mushtaq (Forman Christian College, Pakistan)

4. Route Search Method for Autonomous Mobile Robots Using Machine Learning
   Mitsuo Wakatsuki (The University of Electro-Communications, Japan), Seiya Okubo (University of Shizuoka, Japan) and Tetsuro Nishino (The University of Electro-Communications, Japan)
8:00 a.m. – 3:30 p.m.  REGISTRATION  8th floor Lobby
8:00 a.m. – 9:00 a.m.  Coffee, Tea and Pastries  8th floor Lobby

9:00 a.m. – 10:00 a.m.  KEYNOTE SPEAKER

Dr. Scotty Strachan
University of Nevada, Reno, USA
“Cyberinfrastructure and the Critical Role of Engineering Partnerships for Science Discovery”
Location:  Bayou Ballroom A, 8th floor
Session Chair: Sergiu Dascalu, University of Nevada, Reno

10:00 a.m. – 10:30 a.m.  COFFEE BREAK  8th floor Lobby

SESSION 4:

COMPUTER APPLICATIONS
Tuesday October 9, 10:30 a.m. - 12:00 p.m., Bayou Ballroom A, 8th floor
Session Chair: Quan Yuan (The University of Texas of the Permian Basin)

1.  The Design and Development of a Web-based Ticket Management Solution using PhoneGap
Quan Yuan, Melody Snitker, Haesun Lee, and Ilhyun Lee (The University of Texas of the Permian Basin)

2.  Flexible Architecture for Analysis of Water Control Structures
Chendi Cao and Mitchell Neilsen (Kansas State University)

Tomoki Maeda, Teruhisa Hochin and Hiroki Nomiya (Kyoto Institute of Technology)

4.  Practical guide for the implementation of electronic government aligned with Peruvian regulation
Mariuxi Bruzza (Universidad Laica “Eloy Alfaro” de Manabi, Ecuador) and Manuel Tupia (Pontificia Universidad Católica del Perú)

12:00 p.m. – 1:30 p.m.  CONFERENCE LUNCHEON AND BEST PAPER AWARDS
LOCATION:  JAZZ/DIXIELAND
DATA MINING
Tuesday October 9, 1:30 p.m. – 3:00 p.m., Bayou Ballroom A, 8th floor
Session Chair: Qin Ding (East Carolina University)

1. Influence Modeling, Volume Prediction and Sentiment Analysis of Short Texts on Twitter
Trung Nguyen, Amartya Hatua, Asheshbabu Pothuraju and Andrew Sung (The University of Southern Mississippi)

2. GLCM based Skin Diseases Classification using Texture Features
Zafar Iqbal, Saqib Iqbal (Quaid-i-Azam University, Pakistan), Mubashar Mushtaq (Forman Christian College, Pakistan), Ghazanfar Farooq and Khalid Saleem (Quaid-i-Azam University, Pakistan)

3. Data Mining Applications on Biomechanical Data
Patrick Rider and Qin Ding (East Carolina University)

4. Effect of Reality of Pictures in a Horror Game on Feelings of Fear
Kotoko Yamaguchi, Teruhisa Hochin, Hiroki Nomiyaa and Yukiko Nishizaki (Kyoto Institute of Technology)

3:00 p.m. – 3:30 p.m. COFFEE BREAK 8th floor Lobby

SESSION 6:

Software, Tools and Applications
Tuesday October 9, 3:30 p.m. – 5:00 p.m., Bayou Ballroom A, 8th floor
Session Chair: Gongzhu Hu (Central Michigan University)

1. Artificial Intelligence Techniques in Cancer Diagnosis- Approach to Healthcare
Jaskarn Singh (BBSSW Medical) and Narayan Debnath (Winona State University)

2. Computer Based Career Guidance: An Ontology Use For Student Profiling
M.Ab Alimam, H. Seghioener, M. Am Alimam M. Cherkaoui and N. Hebah (LIROSA, Faculty of Science (FS) & Middle East University, Tetouan, Morocco & Amman, Jordan)

3. Creating A Compiler Optimized Inlineable Implementation of Intel SVML SIMD Intrinsics
Promyk Zamojski and Raafat Elfouly (Rhode Island College)

4. System Architecture of Mobile Application for Emergency Medical Situation and Continuous Monitoring
Rashmi Mandal Vijayvergiya (National Institute of Electronics & Information Technology, India), Partha Ghosh (Kingston School of Management & Science, KEI, India), Lalmohan Dutta (University of Calcutta, India), Runa Ganguli (The Bhawanipur Education Society College, India), Narayan Debnath (International Society for Computers and Their Applications) and Soumya Sen (University of Calcutta, India)

5. F2BPM: A Framework to evaluate the Quality of Conceptual Models of Business Processes
Narayan Debnath (International Society for Computers and Their Applications), Carlos Salgado, Mario Peralta, Daniel Riesco, Lorena Baigorria, Germán Montejano (Naturales Universidad Nacional de San Luis, Argentina), Ilhyun Lee, Haesun Lee (University of Texas of the Permian Basin)
Wednesday, October 10, 2018

8:00 a.m. – 11:00 p.m.  REGISTRATION  8th floor Lobby
8:00 a.m. – 9:00 a.m.  Coffee, Tea and Pastries  8th floor Lobby

SOFTWARE ENGINEERING
Wednesday October 10, 8:30 a.m. - 10:00 a.m., Bayou Ballroom A, 8th floor
Session Chair: Ziping Liu (Southeast Missouri State University)

1. Architecture for Self-Sovereign Identity
   Kalman Toth (NexGenID) and Alan Anderson-Priddy (Portland State University)

2. Effective Practices for Refactoring a Legacy Java Application into a Microservice Architecture
   Fabio Manzano, Mario Buratto, Amadeu Bonfante, George Costa (Instituto de Pesquisas Eldorado) and Thomas Phelan (Lenovo, Data Center Group)

3. Defect Classification and Analysis in a Small Company
   Eric Abuta (Verity Instruments) and Jeff Tian (Southern Methodist University)

4. Miner and Jeweler: Experience of Teaching an Online Mobile App Development Course
   Ziping Liu (Southeast Missouri State University)

10:00 a.m. – 10:30 a.m.  COFFEE BREAK  8th floor Lobby

MACHINE LEARNING APPLICATIONS
Wednesday October 10, 10:30 a.m. - 12:00 p.m., Bayou Ballroom A, 8th floor
Session Chair: Yan Shi (University of Wisconsin-Platteville)

1. Improvement of Similar Image Retrieval Considering Temporal Changes of Music Impression
   Yuto Shinjo, Teruhisa Hochin and Hiroki Nomiya (Kyoto Institute of Technology)

2. Automated Classification System of Giant White Corn using Image Processing and Supervised Techniques
   Gabriela Gónzales and Juan Gutiérrez-Cárdenas (Universidad de Lima, Peru)

3. Estimation of Plasma Emission Transition Using Clustered Time Series Data
   Shota Nakagawa, Teruhisa Hochin, Hiroki Nomiya (Kyoto Institute of Technology) and Hideya Nakanishi (National Institute for Fusion Science)

4. A Trust Model for Bitcoin using Unsupervised Machine Learning
   Ahmed Bugalwi, Asaad Algarni and Kendall Nygard (North Dakota State University)