

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

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Winona, MN 55987

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

## SPONSOR

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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

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**Monday, October 8, 2018**

8:00 a.m. – 3:30 p.m.  
8:00 a.m. – 9:00 a.m.

**REGISTRATION**  
Coffee, Tea and Pastries

8<sup>th</sup> floor Lobby  
8<sup>th</sup> floor Lobby

8:40 a.m. – 9:00 a.m.

**WELCOME**  
Gongzhu Hu, CAINE Conference Chair  
Frederick Harris, SEDE Conference Chair

Bayou Ballroom A, 8<sup>th</sup> floor

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, 8<sup>th</sup> floor**

**Session Chair: Yan Shi, University of Wisconsin-Platteville**

10:00 a.m. – 10:30 a.m. **COFFEE BREAK**

8<sup>th</sup> floor Lobby

**SESSION 1:**

**SECURITY AND NETWORKS**

Monday October 8, 10:30 a.m. - 12:00 p.m., Bayou Ballroom A, 8<sup>th</sup> floor  
Session Chair: Katia Mayfield (Athens State University)

**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. – 3:00 p.m., Bayou Ballroom A, 8<sup>th</sup> 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 Bektor, 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**

**8<sup>th</sup> floor Lobby**

**SESSION 3:****ARTIFICIAL INTELLIGENCE: APPLICATIONS**

Monday October 8, 3:30 p.m. – 5:00 p.m., Bayou Ballroom A, 8<sup>th</sup> 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)

**Tuesday, October 9, 2018\***

8:00 a.m. – 3:30 p.m.    **REGISTRATION**    8<sup>th</sup> floor Lobby  
8:00 a.m. – 9:00 a.m.    **Coffee, Tea and Pastries**    8<sup>th</sup> 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, 8<sup>th</sup> floor**  
**Session Chair: Sergiu Dascalu, University of Nevada, Reno**

**10:00 a.m. – 10:30 a.m. COFFEE BREAK**    8<sup>th</sup> floor Lobby

**SESSION 4:**

**COMPUTER APPLICATIONS**

Tuesday October 9, 10:30 a.m. - 12:00 p.m., Bayou Ballroom A, 8<sup>th</sup> 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)
- 3. Measuring Method of Volume Condition for Music Listening Experiment Using Equal-Loudness-Level Contours**  
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**

**SESSION 5:****DATA MINING**

Tuesday October 9, 1:30 p.m. – 3:00 p.m., Bayou Ballroom A, 8<sup>th</sup> 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 Nomiya and Yukiko Nishizaki (Kyoto Institute of Technology)

**3:00 p.m. – 3:30 p.m. COFFEE BREAK**

**8<sup>th</sup> floor Lobby**

**SESSION 6:****Software, Tools and Applications**

Tuesday October 9, 3:30 p.m. – 5:00 p.m., Bayou Ballroom A, 8<sup>th</sup> 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. Seghiouer, 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 SVM 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** **8<sup>th</sup> floor Lobby**  
**8:00 a.m. – 9:00 a.m. Coffee, Tea and Pastries** **8<sup>th</sup> floor Lobby**

**SESSION 7:**

**SOFTWARE ENGINEERING**

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

- 1. Architecture for Self-Sovereign Digital 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** **8<sup>th</sup> floor Lobby**

**SESSION 8:**

**MACHINE LEARNING APPLICATIONS**

Wednesday October 10, 10:30 a.m. - 12:00 p.m., Bayou Ballroom A, 8<sup>th</sup> 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 G3nzales and Juan Guti3rrez-C3rdenas (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)