29th International Conference on
Computer Applications in Industry and Engineering
(CAINE-2016)

PROGRAM

September 26–28, 2016

Marriott Tech Center
Denver, Colorado, USA

Sponsored by

International Society for
Computers and Their Applications

64 White Oak court

Winona, MN 55987

Phone: (507) 458-4517; E-mail: isca@isca-hq.org

29th International Conference on Computer Applications in Industry and Engineering (CAINE-2016)

Sponsor: International Society for Computers and Their Applications

Conference Chair	Program Chair
Gongzhu Hu	Takaaki Goto
Central Michigan University, USA	Ryutsu Keizai University, Japan

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Abdul Wahab (Int. Islamic U., Malaysia)
Mitsuo Wakatsuki (U. of Electro-Communications, Japan)
Thomas Way (Villanova U., USA)
Wei Wei (Xi'an U. of Technology, China)
John Weiss (South Dakota School of Mines & Technology, USA)
Pak Wong (U. of Macau, China)
Christoph Wunck (Jade U., Germany)
Filip Zavoral (Charles U., Czech Republic)
Yunpu Zhu (U. of Lethbridge, Canada)
Yan Zhuang (U. of Macau, China

8:00 a.m. — 4:00 p.m.   **Conference Registration – Peak Foyer**
8:00 a.m. — 9:00 a.m.   **Coffee, Tea, and Pastries – Peak Foyer**

8:40 a.m. — 9:00 a.m.   **Welcome and Opening Remarks (Pikes Peak Room)**
Gongzhu Hu, CAINE Conference Chair
Frederick C. Harris, Jr, SEDE Conference Chair

9:00 – 10:00 a.m. Keynote Address
Dr. Tracy Camp
Colorado School of Mines, USA

Implementing a Wireless Geophysical Sensor Network

Location: Pikes Peak Room

Session Chair: Dr. Takaaki Goto, Ryutsu Keizai University, Japan

♨ **10:00 – 10:30 a.m.   Coffee Break**

SESSION A1 —
Bioinformatics & Healthcare
Monday, September 26, 10:30 a.m. – 12:00 noon, Maroon Peak Room
Session Chair: Dr. Donna Hudson, University of California San Francisco, USA

Experimental Study of the Effect of Different Scanning Patterns for Blood Smear Analysis

Khaled El Bannan, Mostafa Mohamed, Behrouz Far (University of Calgary, Canada), Christopher Naugler (University of Calgary and Calgary Laboratory Services, Canada)

A New Scatter Plot Stress Evaluation Method Using Photo-Plethysmography

Minami Tsuchiya, Michio Yokoyama (Yamagata University, Japan)

Complex Data Analysis in Biomedical Applications

Donna Hudson, Maurice Cohen (University of California San Francisco, USA), Samuel Hudson (California State University Bakersfield, USA)

Extending Watershed Segmentation Algorithms for High-Throughput Phenotyping

Mitchell Neilsen, Shravan D. Gangadhara, Trevor Rife (Kansas State University, USA)

12:00 – 1:30 p.m.   Lunch on Your Own

SESSION A2 —
Software Engineering & Information Systems
Monday, September 26, 1:30 p.m. – 3:00 p.m., Maroon Peak Room
Session Chair: Dr. Swapan Bhattacharya, Jadavpur University, India

A Hierarchical Precedence Concurrency Control Protocol for High Data Contention Database Environments

Weidong Xiong, Mohammed Hamdi (Southern Illinois University, USA), Feng Yu (Youngstown State University, USA), Wen-Chi Hou (Southern Illinois University, USA)

RAID on a Heterogeneous Disk Array

András Fekete, Elizabeth Varki (University of New Hampshire, USA)

Modify Bayesian Network Structure with Inconsistent Constraints

Yi Sun, Yun Peng (University of Maryland Baltimore County, USA)

IEEE754 Floating Point Bound Intervals for static analysis of JavaScript Programs

Astrid Younang, Lunjin Lu (Oakland University, USA)

☕ **3:00 – 3:30 p.m.   Coffee Break**

SESSION A3 —
Control Systems & Distributed Systems
Monday, September 26, 3:30 p.m. – 5:20 p.m., Maroon Peak Room
Session Chair: Dr. Ka C Cheok, Oakland University, USA

Minimizing Averaged Error For Dynamic Matrix Control

Samer Mansour (Alfaisal University, Saudi Arabia), Jalal Karam (Emirates College for Advanced Education, United Arab Emirates)

Digital Control of PWM Systems for LED Application Using One-Cycle Averaging

Mohammed Al-Numay (King Saud University, Saudi Arabia)

An Emergency Message Propagation System Using Roadside Units and Vehicle-To-Vehicle Communication

Besat Zardosht, Steven Beauchemin, Michael Bauer (University of Western Ontario, Canada)

Levenberg-Marquadt Algorithm tuned Gradient Descent-based Model Reference Adaptive Control Scheme

Ka C Cheok, Ana Farhat, Sangeetha Prakasam, Narendra Kintali (Oakland University, USA)

Adaptive Cost Optimization and Fair Resource Allocation in Computational Grid Systems

Satish Penmatsa (Framingham State University, USA), Gurdeep S Hura (University of Maryland Eastern Shore, USA)

8:00 a.m. — 4:00 p.m.   **Conference Registration – Peak Foyer**
8:00 a.m. — 9:00 a.m.   **Coffee, Tea, and Pastries – Peak Foyer**

9:00 – 10:00 a.m. Keynote Address
Dr. Marin Litoiu
York University, Canada

Engineering Model-based Adaptive Software Systems

Location: Pikes Peak Room

Session Chair: Dr. Sergiu Dascalu, University of Nevada, Reno, USA

☕ **10:00 a.m. – 10:30 a.m.   Coffee Break**

SESSION A4 — **Computer Security**
Tuesday, September 27, 10:30 a.m. – 12:00 noon, Maroon Peak Room
Session Chair: Dr. Manuel Tupia, Pontificia Universidad Catolica del Peru, Peru

Verifying SCADA Security in Industrial Control System Security

Mehdi Sabraoui, Jeff Hieb (University of Louisville, USA), James Graham (True Secure SCADA LLC, USA)

An Information Security Framework for Services of M-Government from Peruvian Local Governments

Manuel Tupia, Mariuxi Bruzza (Pontificia Universidad Catolica del Peru, Peru)

A Prototype Development of a Declarative Approach for Computer System Security

Yun Bai, Edward Caprin, Yan Zhang (Western Sydney University, Australia)

Weightage Based Clustering for Energy Efficient Mobile Data Offloading

Parag Kumar Guha Thakurta, Arun Pandey, Spandan Chowdhury (National Institute of Technology, Durgapur, India), Swapan Bhattacharya (Jadavpur University, India), Subhansu Bandyopadhyay (Brainware University, India)

🍴 **12:00 – 1:30 p.m.   Conference Luncheon and Best Paper Awards**

Location: Evergreen E and F Rooms

Computers in Education
Tuesday, September 27, 1:30 p.m. – 3:00 p.m., Maroon Peak Room
Session Chair: Dr. Antoine Bossard, Kanagawa University, Japan

A Scientific Approach to Chinese Characters: Rationale, Ontology and Application

Antoine Bossard (Kanagawa University, Japan), Keiichi Kaneko (Tokyo University of Agriculture and Technology, Japan)

Visualization for Database Algorithms

Ying Jin (Computer Science Department, California State University, Sacramento, USA), Vijetha Ramu (California State University, Sacramento, USA)

Undergraduate Research and Experiments in Robotics-Based Accomplishments for STEM Education

Seung-Yun Kim (The College of New Jersey, USA), Reza Mirdamadi, Osman Guzide (Shepherd University, USA)

Co-Curricular Activities for Soft Skills and Underserved Minority Student Success

Meline Kevorkian, Greg Simco (Nova Southeastern University, USA)

☕ 3:00 – 3:30 p.m.   Coffee Break

Computer Networks
Tuesday, September 27, 3:30 p.m. – 5:20 p.m., Maroon Peak Room
Session Chair: Dr. Wei Li, Nova Southeastern University, USA

A Cyber-Robust Connected Control System: Experimental Validation

Charles Kim (Howard University, USA), Ravindranath Jaglal (Washington Square Technologies, USA)

Cybersecurity Testbed Experimentation of a Resilient Control System for Power Substations

Charles Kim (Howard University, USA), Karen Green (DC Water and Sewer Authority, USA), Andre Duarte Palhares (Pontificia Universidade Catolica de Minas Gerais, Brazil)

Methods to Improve Capacity in Grid Networks

Amalya Mihnea (Keiser University, USA), Mihaela Cardei (Florida Atlantic University, USA)

Combining Host and Network-based Intrusion Detection System to Mitigate Insider Threat

Ajay Katangur (Texas A&M University-Corpus Christi, USA), Somasheker Akkaladevi (Virginia State University, USA), Dulal Kar (Texas A&M University-Corpus Christi, USA)

A Comparative Evaluation of Trust Models in P2P Networks

Wei Li (Nova Southeastern University, USA)

8:00 a.m. — 10:00 a.m.　　**Conference Registration – Peak Foyer**
8:00 a.m. — 8:30 a.m.　　**Coffee, Tea, and Pastries – Peak Foyer**

SESSION A7 —
Data Mining
Wednesday, September 28, 8:30 a.m. – 10:20 a.m., Maroon Peak Room
Session Chair: Dr. Gongzhu Hu, Central Michigan University, USA

Parallel K-Means Clustering with Triangle Inequality

Rachel Krohn, Christer Karlsson (South Dakota School of Mines and Technology, USA)

Knowledge Discovery Using Unsupervised Learning Techniques: A Case Study on Canadian Crime and Income Data

Neil Hanak, Mitchell Koens, Kevin Saforo, Mohamad El-Hajj (MacEwan University, Canada)

A Graph-based Patent Evolution Model using Summarization and Patent Relationships

Lun-Chi Chen (National Center for High-performance Computing, National Applied Research Laboratories, Taiwan), Yu-Chiuan Chen, Jyun-Yao Huang, I-En Liao (National Chung-Hsing University, Taiwan)

Infrastructure and Comparative Analysis of Stock Price Forecasting Techniques

Antonio M.H. Punzo, Ower M. Rosier, George Dimitoglou (Hood College, USA)

Sentiment Analysis of Tweets on 2016 US Presidential Election Candidates

Gongzhu Hu, Snehitha Kodali, Anusha Padamati (Central Michigan University, USA)

SESSION B7 —
Human-Computer Interface & Image / Signal Processing
Wednesday, September 28, 8:30 a.m. – 10:00 a.m., Blanca Peak Room
Session Chair: Dr. Angkul Kongmunvattana, Clayton State University, USA

A Unified Approach for Arabic Language Dialect Detection

Rania Ziedan (University of Louisville, USA), Michael Michael, Abdulwahab Alsammak, Mona Mursi (Benha University, Egypt), Adel Elmaghraby (University of Louisville, USA)

Development of Breast Abnormality Detection System with Colors Based on the Wavelet Decomposition Technique

Maha Ali (Sudan University of Science and Technology, Sudan), Magdi Amien (University of Gezira, Sudan)

A Study of Scientific Application Interfaces and a Proposed GUI for Brain Signal Processing

Catherine Stringfellow, Tina Johnson, Richard Simpson, Michael Grayson, Michael Ellerkamp, Ali Khalid, Uri Easter, Cavaughn Browne (Midwestern State University, USA)

An HCI Study on I/O Devices using Hand-Eye Coordinated Tasks

Rojin Aliehyaei (Georgia Institute of Technology, USA), Angkul Kongmunvattana (Clayton State University, USA)

♨ 10:00 – 10:30 a.m.   Coffee Break

SESSION A8 — | **Computer Architecture, Scientific Computing**
Wednesday, September 28, 10:30 a.m. – 11:40 p.m., Maroon Peak Room
Session Chair: Dr. John Weiss South Dakota School of Mines and Technology USA

Parallelizing Genetic Algorithms with GPGPU

John Weiss (South Dakota School of Mines and Technology, USA)

Discussion of RAMCloud Storage Based on NUMA Architecture

Jian Zhang, Mei Wang (Shenzhen Polytechnic, China), Huanmei Wu (Indiana University-Purdue University Indianapolis, USA)

NUMA Memory Arrangement by Using BW-SA

Jian Zhang, Mei Wang (Shenzhen Polytechnic, China), Huanmei Wu (Indiana University-Purdue University Indianapolis, USA)

SESSION B8 — | **Computer Security**
Wednesday, September 28, 10:30 a.m. – 11:40 p.m., Blanca Peak Room
Session Chair: Dr. Takaaki Goto, Ryutsu Keizai University, Japan

Improvement and Implementation of Interactive Graph Cut Algorithm

Zhiyi Fang, Wenzeng Huang (Jilin University, China), Yukang Tian (Northeast Normal University, China), Cheng Ding (Jilin University, China)

Access Control Model of Enterprise Instant Messaging System Based on RSA

Xiaoyun Liu, Zhiyi Fang (Jilin University, China), Xinda You (Northeast Normal University, China), Xiaoyue Liu (Jilin University, China)

Measuring Computer Ethics and Cybercrimes Indicators

Yas A. Alsultanny (Arabian Gulf University, Bahrain)

ISCA Conferences in 2017

32nd International Conference on Computers and Their Applications (CATA 2017)
March 20-22, 2017, Waikiki Beach Marriott Resort and Spa, Honolulu, Hawaii, USA
http://www0.info.kanagawa-u.ac.jp/∼abossard/cata2017
Paper submission deadline: October 28, 2016
Notification of acceptance: December 23, 2016
Registration and final manuscripts due: January 20, 2017

8th International Conference on Bioimformatics and Computational Biology (BICOB 2017)
March 20-22, 2017, Waikiki Beach Marriott Resort and Spa, Honolulu, Hawaii, USA
http://http://sce.uhcl.edu/bicob17
Paper submission deadline: October 31, 2016
Notification of acceptance: December 18, 2016
Registration and final manuscripts due: January 20, 2017

30th International Conference on Computers Applications in Industry and Engineering (CAINE 2017)
October 2–4, 2017, Hilton San Diego Airport/Harbor Island, San Diego, California, USA
http://www.isca-hq.org/isca.php?p=Conferences
Paper submission deadline: May 15, 2017
Notification of acceptance: June 30, 2017
Registration and final manuscripts due: July 30, 2017

26th International Conference on Software Engineering and Data Engineering (SEDE 2017)
October 2–4, 2017, Hilton San Diego Airport/Harbor Island, San Diego, California, USA
http://www.isca-hq.org/isca.php?p=Conferences
Paper submission deadline: May 15, 2017
Notification of acceptance: June 30, 2017
Registration and final manuscripts due: July 30, 2017