

IEEE/ACIS ICIS 2015

14th IEEE/ACIS International Conference on Computer and Information Science 2015

June 28 - July 1, 2015
Las Vegas, Nevada, USA.



Conference chairs
Roger Lee Central Michigan University, USA
Takayuki Ito Nagoya Institute of Technology, Japan
Yanggon Kim Towson University, USA



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Conference Program

IEEE/ACIS ICIS2015 Conference Program Overview

Room A
(CARSON CITY I)

Room B
(CARSON CITY II)

Room C
(MESQUITE)

Sunday, June 28, 2015

16:00-18:00	Registration(Foyer)
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Monday, June 29, 2015

9:00-10:00	Registration(Foyer)		
10:00-10:30	Welcome Coffee(Foyer)		
10:30-11:00	Opening(ELDORADO)		
11:00-12:00	Keynote Address(ELDORADO)		
12:00-13:05	Lunch (SAVOY)		
13:05-15:10	Hardware and VLSI [Session 1A]	Speech, Dialog, and Text Recognition [Session 1B]	Security [Session 1C]
15:10-15:30	Coffee Break(Foyer)		
15:30-18:00	Hardware and Optimization [Session 2A]	Intelligent Systems [Session 2B]	Network [Session 2C]

Tuesday, June 30, 2015

8:30-10:10	Special Session 1	Workshop 1 / SERA	Workshop 3
10:10-10:30	Coffee Break(Foyer)		
10:30-12:10	Special Session 1	Workshop 1 / SERA	Workshop 3
12:10-13:05	Lunch (ELDORADO)		
13:05-15:10	E-commerce and Multimedia [Session 3A]	Humans' Behavior and Application [Session 3B]	Workshop 3
15:10-15:30	Coffee Break(Foyer)		
15:30-17:35	Clustering and Classification [Session 4A]	Big Data and Processing [Session 4B]	Workshop 3
18:30-20:30	Dinner Banquet & Award Presentation (ELDORADO)		

Wednesday, July 1, 2015

8:30-10:10	Cloud and Load Balancing [Session 5A]	Biometrics and Security [Session 5B]	Software and Modeling [Session 5C]
10:10-10:30	Coffee Break(Foyer)		
10:30-12:10	IoT and Mobile Systems [Session 6A]	Frontier of Network and Mining [Session 6B]	Software Development [Session 6C]
12:10-13:05	Lunch (ELDORADO)		
13:05-15:10	Data Mining and Application [Session 7A]	Application of Semantics and Modeling [Session 7B]	Smart Detection [Session 7C]

Thursday, July 2, 2015

9:30-10:00	Forum Discussion(invitation only)
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13:05-15:10 **Session 1C** **Security** **Room C**
Session Chair: Takahiro Uchiya

Secure in-vehicle Systems against Trojan Attacks
Masaya Yoshikawa, Kyota Sugioka, Yusuke Nozaki, Kensaku Asahi

Deploying Agents in the Network to Detect Intrusions
Shankar Banik, Luis Pena

Quantifying Security Risk by Measuring Network Risk Conditions
Candace Suh-Lee, Juyeon Jo

Utilizing NFC to Secure Identification
Robert Gripentog, Yoohwan Kim

15:30-18:00 **Session 2A** **Hardware and Optimization** **Room A**
Session Chair: Shuichi Oikawa

Selective Data Buffering Module for Unified Hybrid Storage System
Kihyun Park, Su-Kyung Yoon, Shin-Dug Kim

Dual RAID Techniques for Ensuring High Reliability and Performance in SSD
Sohyun Koo, Se Jin Kwon, Sunsoo Kim, Tae-Sun Chung

Fast Bootstrapping Method for the Memory-Disk Integrated Memory System
Sangjae Nam, Su-Kyung Yoon, Shin-Dug Kim

Accelerating Storage Access by Combining Block Storage with Memory Storage
Shuichi Oikawa

Dynamic Binary Translation in a Type-II Hypervisor for CAVIUM MIPS64 Based Systems
Qurrat Ulain, Usama Anwar, Asad Raza, Abdul Qadeer, Ghulam Mustafa, Abdul Waheed

15:30-18:00 **Session 2B** **Intelligent Systems** **Room B**
Session Chair: Toshiharu Sugawara

Automated Negotiating Agent based on Estimated Expected Utility of Evolutionary Stable Strategies
Akiyuki Mori, Takayuki Ito

Single-Object Resource Allocation in Multiple Bid Declaration with Preferential Order
Kengo Saito, Toshiharu Sugawara

Formal Specification and Reasoning for Situated Multi-agent System
Zhuang Li, Huaikou Miao

SQUED: A Novel Crowd-sourced System for Detection and Localization of Unexpected Events from Smartphone-Sensor Data
Taishi Yamamoto, Kenta Oku, Hung-Hsuan Huang, Kyoji Kawagoe

Multiagent-based Distributed Backup System for Individuals
Takahiro Uchiya, Motohiro Shibakawa, Tetsuo Kinoshita, Ichi Takumi

A Scoring Rule-based Truthful Demand Response Mechanism
Keisuke Hara, Takayuki Ito

15:30-18:00 **Session 2C** **Network** **Room C**
Session Chair: Simon Xu

COPE: Cooperative Power and Energy-efficient Routing Protocol for Wireless Sensor Networks
Saima Jamil, Saqib Jamil, Sheeraz Ahmed, Muhammad Zubair, Farman Sikandar

SONET over RPR
Ammar Hamad, Michel Kadoch

Social Routing: A Novel Routing Protocol for Delay Tolerant Network based on Dynamic Connectivity
Quoc Nguyen Viet, Pham Van Phuoc, Trinh Quoc Son, Lung Vu Duc

Empirical Evaluation of Designing Multicasting Network with Minimum Delay Variation
Nicklaus Rhodes, Shankar Banik

Opportunistic Wireless Network Coding Based On Small-time Scale Traffic Prediction
Rui Zhang, Jie Li, Quan Qian, Wei Feng

A Novel Contention Window Backoff Algorithm for IEEE 802.11 Wireless Networks
Ikram Syed, Bosung Kim, Byeong-Hee Roh, Il-Hyuk Oh

Tuesday, June 30, 2015

8:30-12:10 **Special Session 1** **RoomA**

8:30-12:30 **Workshop 1 / SERA2015 Session** **RoomB**

8:30-17:35 **Workshop 3** **RoomC**

13:05-15:10 **Session 3A** **E-commerce and Multimedia** **Room A**
Session Chair: Toshiharu Sugawara

Effective Gaze Writing with Support of Text Copy and Paste
Reo Kishi, Takahiro Hayashi

A Multimedia-Oriented Digital Ecosystem: a New Collaborative Environment
Solomon Asres Kidanu, Yudith Cardinale, Gilbert Tekli, Richard Chbeir

Development of Mobile Voice Navigation System Using User-Based Mobile Maps Annotations
Tomohiro Yanagi, Daisuke Yamamoto, Naohisa Takahashi

3D Web Applications in E-Commerce: A Secondary Study on the Impact of 3D Product Presentations Created with HTML5 and WebGL

Jens Geelhaar, Gabriel Rausch

Some Observations On Online Advertising: A New Advertising System

Dapeng Liu, Shaochun Xu, Lichao Chen, Chunning Wang

13:05-15:10 **Session 3B** **Humans' Behavior and Application** **Room B**
Session Chair: Naohiro Ishii

A Novel Architecture for Learner's Profiles Interoperability

Leila Ghorbel, Corinne Amel Zayani, Ikram Amous

A Human Behavior Processes Database Prototype System for Surgery Support

Zhang Zuo, Kenta Oku, Hung-Hsuan Huang, Kyoji Kawagoe

Searching Human Actions based on a Multi-dimensional Time Series Similarity Calculation Method

Yu Fang, Kosuke Sugano, Kenta Oku, Hung-Hsuan Huang, Kyoji Kawagoe

Automatic Generation of Programming Exercises for Learning Programming Language

Akiyoshi Wakatani, Toshiyuki Maeda

eMedicalHelp: A Customized Medical Diagnostic Application: Is a single questionnaire enough to measure stress?

Hedieh Ranjbartabar, Amir Maddah, Manolya Kavakli

15:30-17:35 **Session 4A** **Clustering and Classification** **Room A**
Session Chair: Kazunori Iwata

Automatic Extraction of Text Regions from Document Images by Multilevel Thresholding and K-means Clustering

Hoai Nam Vu, Tuan Anh Tran, In Seop Na, Soo-Hyung Kim

Automated Generation of Hierarchic Image Database with Hybrid Method of Ontology and GMM-based Image Clustering

Ryosuke Yamanishi, Ryoya Fujimoto, Yuji Iwahori, Robert J. Woodham

Nearest Multi-Prototype Based Music Mood Classification

Babu Kaji Baniya, Joonwhoan Lee, Choong Seon Hong

Objective Framework for Early-Stage Comparison of Software Development Project Types

Donghwoon Kwon, Robert Hammell

15:30-17:35 **Session 4B** **Big Data and Processing** **Room B**
Session Chair: Gongzhu Hu

Fast and Effective Content Based Document Information Retrieval System

Moon Soo Cha, So Yeon Kim, Jae Hee Ha, Min-June Lee, Young-June Choi, Kyung-Ah Sohn

A Feature Selection Method for Comparison of Each Concept in Big Data
Takafumi Nakanishi

Generalized Entropy based Semi-Supervised Learning
Taocheng Hu, Jinhui Yu

Investigation of Localized Sentiment for a Given Product by Analyzing Tweets
Syed Akib Anwar Hridoy, Faysal Ahmed, Mohammad Samiul Islam, M. Tahmid Ekram, Mohammad Rashedur Rahman

A Big Data Approach to Enhance the Integration of Access Control Policies for Web Services
Mohammed Alodib, Zaki Malik

Wednesday, July 1, 2015

8:30-10:10 **Session 5A** **Cloud and Load Balancing** **Room A**
Session Chair: Teruhisa Hochin

Implementation of Modified Overload Detection Technique with VM Selection Strategies Based on Heuristics and Migration Control
Mohammad Alaul Haque Monil, M. Rashedur Rahman

Clustered Based VM Placement Strategies
Mohammed Rashid Chowdhury, Mohammad Raihan Mahmud, M Rashedur Rahman

Emerald: Enhance Scientific Workflow Performance with Computation Offloading to the Cloud
Hao Qian, Daniel Andresen

Feasibility Analysis for Incorporating/Deploying SIEM for Forensics Evidence Collection in Cloud Environment
Muhammad Irfan, Haider Abbas, Waseem Iqbal

8:30-10:10 **Session 5B** **Biometrics and Security** **Room B**
Session Chair: Yanggon Kim

Security measures for Web ETL processes
Salma Dammak, Faiza Ghozzi Jedidi, Faiez Gargour

A Review of Multimodal Biometric Systems: Fusion Methods and Its Applications
Mehdi Ghayoumi

An Adaptive Fuzzy Multimodal Biometric System for Identification and Verification
Mehdi Ghayoumi, Kambiz Ghazinour

Comparative Analysis on the Signature Algorithms to Validate AS Paths in BGPsec
Kyoungha Kim, Yanggon Kim

8:30-10:10 **Session 5C** **Software and Modeling** **Room C**
Session Chair: Kazunori Iwata

Depth-First Heuristic Search for Software Model Checking
Jun Maeoka, Yoshinori Tanabe, Fuyuki Ishikawa

Using SPIN to Check Simulink Stateflow Models
Chikatoshi Yamada, D. Michael Miller

A Method for Secure RESTful Web Service
Sungchul Lee, Ju-Yeon Jo, Yoohwan Kim

An Autonomous Model to Enforce Security Policies Based on User's Behavior
Mehdi Ghayoumi, Kambiz Ghazinour

10:30-12:10 **Session 6A** **IoT and Mobile Systems** **Room A**
Session Chair: Takanobu Otsuka

An Energy-saving Task Scheduler for Mobile Devices
Hao Qian, Daniel Andresen

Energy-Efficient Distributed Computing Solutions for Internet of Things with ZigBee Devices
Grzegorz Chmaj, Henry Selvaraj

Regimdroid : Framework for Customize Android Platform to act as a Brain for Telepresence Robot
Nouha Ghribi, Boudour Ammar, Adel M. Alimi

Challenges and Implementation of Ad-hoc Water Gauge System for the Grasp of Internal Water Damage
Takanobu Otsuka, Yoshitaka Torii, Takayuki Ito

10:30-12:10 **Session 6B** **Frontier of Network and Mining** **Room B**
Session Chair: Susel Fernandez

Multivariate Temporal Link Prediction in Evolving Social Networks
Alper Özcan, Şule Gunduz Oguducu

A Graph Model Based Author Attribution Technique for Single-Class Email Classification
Novino Nirmal A., Tae-Sun Chung, Kyung-Ah Sohn

Enhancing the Impact of Science Data: Toward Data Discovery and Reuse
Alan Chappell, Jesse Weaver, Sumit Purohit, William Smith, Karen Schuchardt, Patrick West, Benno Lee, Peter Fox

Introducing the Concept of "Always-Welcome" Recommendations
Edson Benedito Santos Junior, Rafael D'Addio, Arthur Fortes Da Costa, Marcelo Manzato, Rudinei Goularte

10:30-12:10 **Session 6C** **Software Development** **Room C**
Session Chair: Yoshinobu Kawabe

SAF: States Aware Fully Associative FTL for Multitasking Environment
Usman Anwar, Se Jin Kwon, Tae-Sun Chung

Robustness Testing of the Non-interference Property in Component-based Distributed Systems
Maha Naceur, Lilia Sfaxi

Tolerance to Complexity: Measuring Capacity of Development Teams to Handle Source Code Complexity
Marcos Alvares Barbosa Junior, Fernando Buarque de Lima Neto, Tshilidzi Marwala

13:05-15:10 **Session 7A** **Data Mining and Application** **Room A**
Session Chair: Tomomichi Hayakawa

A Pruning Algorithm for Reverse Nearest Neighbors in Directed Road Networks
Rizwan Qamar, Muhammad Attique, Tae-Sun Chung

CORE: Continuous Monitoring of Reverse k Nearest Neighbors on Moving Objects in Road Networks
Muhammad Attique, Hyung-Ju Cho, Tae-Sun Chung

Mining Information Assurance Data with a Hybrid Intelligence/Multi-agent System
Charles Fowler, Robert Hammell

Using Ant's Colony Algorithm for Improved Segmentation for Number Plate Recognition
Shantanu Prakash, Sanchay Dewan, Shreyansh Bajaj

A Kernel based Atanassov's Intuitionistic Fuzzy Clustering for Network Forensics and Intrusion Detection
Anupam Panwar

13:05-15:35 **Session 7B** **Application of Semantics and Modeling** **Room B**
Session Chair: Juyeon Jo

Multi-purpose Adaptable Business Tier Components Based on Call Level Interfaces
Óscar Mortágua Pereira, Rui L. Aguiar

Architecture for Intelligent Transportation System based in a General Traffic Ontology
Susel Fernandez, Takayuki Ito, Rafik Hadfi

Evaluating a GA-based Approach to Dynamic Query Approximation on an Inference-enabled SPARQL Endpoint
Yuji Yamagata, Naoki Fukuta

A Semantic Approach for Transforming XML Data to RDF triples
Mohamed Kharrat, Anis Jedidi, Faiez Gargouri

13:05-15:35

Session 7C

Smart Detection

Room C

Session Chair: Takanobu Otsuka

Decomposition of Partly Occluded Objects Based on Evaluation of Figural Goodness
Takahiro Hayashi, Tatsuya Ooi, Motoki Sasaki

Web-based Motion Detection System for Health Care
Ruiling Gao, Minghuan Zhao, Zhihui Qiu, Yingzhou Yu, C. Hwa Chang

Mobile Phone Spam Image Detection based on Graph Partitioning with Pyramid Histogram of Visual Words Image Descriptor
So Yeon Kim, Kyung-Ah Sohn

In-house Alert Sounds Detection and Direction of Arrival Estimation to Assist People with Hearing Difficulties
Mohammad Daoud, Mahmoud Al-Ashi, Fares Abawi, Ala Khalifeh

A Personalized Music Discovery Service based on Data Mining
Md Mahfuzur Rahman Siddiquee, Md. Saifur Rahman, Naimul Haider, Shahnewaz Ul Islam Chowdhury, Mohammad Rashedur Rahman, Sharnendu Banik

Automated Thresholding of Lung CT Scan for Artificial Neural Network based Classification of Nodules
Sheeraz Akram, Muhammad Younus Javed, Ayaz Hussain

Special Session 1

Special Session on Development of Software System and its Applications

8:30-12:10 Tuesday, June 30, 2015

RoomA

Session Chair: Kazunori Iwata

Robust Location Tracking Method for Mixed Reality Robots using a Rotation

Masahiro Yamamoto, Kazuhiro Suzuki, Ryosuke Ogawa, Nobuhiro Ito, Yoshinobu Kawabe

Verifying Ignition Timing of Gasoline Direct Injection Engine's PCM

Masato Yamauchi, Nobuhiro Ito, Yoshinobu Kawabe

Analysis of Driving Behaviors based on GMM by using Driving Simulator with Navigation Plugin

Naoto Mukai

(Coffee Break)

Classification on Nonlinear Mapping of Reducts Based on Nearest Neighbor Relation

Naohiro Ishii, Ippei Torii, Naoto Mukai, Kazunori Iwata, Toyoshiro Nakashima

Analyzing Relationship between the Number of Errors in Review Processes for Embedded Software Development Projects

Toyoshiro Nakashima, Kazunori Iwata, Yoshiyuki Anan, Naohiro Ishii

Bin-Based Estimation of the Amount of Effort for Embedded Software Development Projects with Support Vector Machines

Kazunori Iwata, Elad Liebman, Peter Stone, Toyoshiro Nakashima, Yoshiyuki Anan, Naohiro Ishii

Workshop 1

International Workshop on Information Design and Media Technology (IDMT2015)

8:30-12:30 Tuesday, June 30, 2015

RoomB

Session Chair: Takayuki Fujimoto

Proposal of programming creation application using road signs by smartphones

Reiko Kuwabara, Eigo Ito, Takayuki Fujimoto

Proposal of Multiple Travel Scheduling System based on Inverse Operation Method

Kazuya Murata, Takayuki Fujimoto

A proposal of Programming Education System using Mechanical Calculator Mechanism

Eigo Ito, Takayuki Fujimoto

SDSS : Proposal on Feeding Support Application Software which Enables the User to Create a State of "Mental Alertness"

Motoichi Adachi, Takayuki Fujimoto

A Proposal of the System to Stop a Decline of the Interest of Great East Japan Earthquake

Koji Fujita, Takayuki Fujimoto

SERA2015 session

8:30-12:30 Tuesday, June 30, 2015(with Workshop 1)

RoomB

Session Chair: *Takayuki Fujimoto*

An Improved Multi-SOM Algorithm for Determining the Optimal Number of Clusters
Imèn Khanchouch, Malika Charrad, Mohamed Limam (Video Presentation)

Instruction level Loop De-optimization -- Loop Rerolling and Software De-pipelining
Erh-Wen Hu, Bogong Su, Jian Wang

Ensemble Feature Selection of microRNAs and Human Cancer Classification
Minghao Piao, Hyoung Woon Song, Keun Ho Ryu

Petri Nets-based Design of Real-Time Reconfigurable Networks on Chips
Hela Ben Salah, Adel Benzina, Mohamed Khalgui

13:05-15:35 Wednesday, July 1, 2015(with Session 7B)

Room B

Session Chair: Juyeon Jo

New Adaptive Middleware for Real-Time Embedded Operating Systems
Hamza Chniter, Fethi Jarray, Mohamed Khalgui

Real-Time Reconfigurable Scheduling of Multiprocessor Embedded Systems Using Hybrid Genetic Based Approach
Hamza Gharsellaoui, Ismail Ktata, Naoufel Kharroubi and Mohamed Khalgui

Workshop 3

The 6th International Workshop on Intelligent Computational Science (ICS2015)

8:30-12:10 Tuesday, June 30, 2015

RoomC

Workshop 3 (I): Session Chair: Simon Xu

Singing Voice Detection of Popular Music Using Beat Tracking and SVM Classification
Wu Fengyan

Link Prediction Using Matrix Factorization with Bagging
Wu Zhifeng

Solving the Supermarket Shopping Route Planning Problem Based on Genetic Algorithm
Chen Xiaojia

Online Advertising Demand-side Platform Business System Design Exploration
Lei Tao

A Feature Selection Algorithm of Music Genre Classification Based on ReliefF and SFS
Wu Meimei

Research and Implementation of Four-prime RSA Digital Signature Algorithm
Xiao Zhenjiu

The Maximal Operator Classifier
Wang Yuqi

13:05-15:10 Tuesday, June 30, 2015

RoomC

Workshop 3 (II): Session Chair: Simon Xu

The Design and Implementation of Personalized News Recommendation System
Han Xuejiao

A Logic Model of Interest in Information Network
Zhou Shiping

Research on Public Opinion Based on Big Data
Shang Songtao

An Automatic Semantic Web Service Composition Method Based on Ontology
Li Ying

Visualization in Media Big Data Analysis
Qi Yingjian

15:30-17:35 Tuesday, June 30, 2015

RoomC

Workshop 3 (III): Session Chair: Simon Xu

Personalized two party key exchange protocol
Yi Tong

Personalized News Recommendation Based on Links of Web
Li Zhenzhong

Interactive Virtual Theater Display System
Feng Min

An Improved Algorithm for Active Contour Extraction Based on Greedy Snake
Ren Hui

Spread Influence Algorithm Of News Website Based on PageRank
Chen Guowei

Keynote Address

MOOCs, MOOE and MOOR In China

Wenai Song , Ph.D.

Dean and Professor
School of Software
North University of China, Taiyuan, China

Abstract

Starting 2012, almost every famous university in the United States have begun to offer the massive open online courses (MOOCs). One year after, more and more well-known universities in China have also joined the team of offering massive open online courses. Some influential computer scientists wondered, should there be thousands of colleges and universities around the country all are teaching the same course to a small group of students in their own universities, why we should not invite one brilliant professor to teach the material to whole the world at once via the Internet? There are a few people who even believe that there might be only ten universities remaining within next fifty years since on line courses might replace the traditional education approach. Would using MOOCs be a way to solve unbalanced distribution of education resource in China?

After the MOOCs, the Massive Open Online Experiments (MOOE) and the Massive Open Online Research (MOOR) appeared in China. As a professor in NUC, China, I have participated the development and deployment of MOOCs, MOOE, and MOOR. It seems that MOOCs, MOOE and MOOR are all the result of combination of computer networks, cloud computing and big data, which could provide maximized resource sharing, especially those high quality resource. All of those three approaches, to some extent, could save the cost on education provided by the government, university and students. This talk will introduce the current status of MOOCs, MOOE and MOOR in China and discuss the techniques and issues associated with them.

Biography

Dr. Wenai Song is Dean and Professor of the school of Software at North University of China, China. She received her Ph.D. in Mechanical and Electronic Engineering from Beijing Institute of Technology. She worked as a postdoctoral academic researcher in Material Engineering at Tsinghua University between 2006 and 2009, and was a Visiting Scholar in Tufts University, U.S.A. Her current research interest areas include Software Engineering, Cloud computing, Big date, and Smart Software City.

Dr. Song has served as the program chair for several international conferences including the IEEE/ACIS ICIS 2014.

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