

32nd International Conference on
**Computer Applications in Industry
and Engineering**
(CAINE-2019)

PROGRAM

September 30 - October 2, 2019

Sheraton San Diego Hotel and Marina
Bay Tower
San Diego, CA 92101, USA

Sponsored by



International Society for
Computers and Their Applications

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32nd International Conference on Computer Applications in Industry and Engineering (CAINE-2019)

SPONSOR

International Society for Computers and Their Applications (ISCA)

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Dr. Takaaki Goto, Toyo University, Japan
Dr. Quan Yuan, University of Texas-Permian Basin, USA

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Monday, September 30, 2019

8:00 a.m. – 3:00 p.m. REGISTRATION – Coronado Foyer (Bay Tower).

8:00 a.m. – 9:00 a.m. Coffee, Tea and Pastries - Coronado Foyer.

8:40 a.m. – 9:00 a.m. WELCOME, Room: Coronado A

**Fred Harris, Sergiu Dascalu, Sharad Sharma, and Rui Wu, SEDE
Chairs**

Gongzhu Hu, Yan Shi, Takaati Goto, Quan Yuan, CAINE Chairs

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

Dr. Lei Yang

Department of Computer Science and Engineering, University of Nevada, Reno, USA

**“Big Data Analytics for Wind Energy Integration: Spatio-Temporal Wind Power
Analysis and Stochastic Optimization”**

Location: Coronado A

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

10:00 a.m. – 10:30 a.m. COFFEE BREAK, Coronado Foyer

SESSION 1:

NETWORK AND SECURITY

Monday, September 30, 10:30 a.m. - 12:00 p.m., Room: Coronado A

Session Chair: Thitima Srivatanakul (City University of New York)

- 1. SAFEST: Secure Actions for FTP Environment with Smart Token**
Tarek S. Sobh (El Shorouk Academy, Egypt) and Awad H. Khalil (The American University in Cairo, Egypt)
- 2. The Design and Implementation of a Cloud Based Presentation System**
Abhijeet Ubale and Jiang Guo (California State University of Los Angeles)
- 3. The Use of Social Media by Local Governments: The Case of Manabí’s Cantons in Ecuador**
Gonçalo Paiva Dias (Universidade de Aveiro, Portugal), Mariuxi Bruzza (University Laical “Eloy Alfaro” of Manabí, Ecuador) and Manuel Tupia (Pontificia Universidad Católica del Perú)
- 4. An Online Community Site that Incorporates the use of Social Networks Software: A Case of an Open University in Thailand**
Thitima Srivatanakul (York College – City University of New York)

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

SESSION 2:**ARTIFICIAL INTELLIGENCE**

Monday, September 30, 1:30 p.m. – 3:00 p.m., Room: Coronado A
Session Chair: Dr. Jucheol Moon (California State University Long Beach)

- 1. Machine Learning as an Efficient Diagnostic Tool for Fault Detection and Localization in Solar Photovoltaic Arrays**
Masoud Alajmi, Sultan Aljahdali, Sultan Alsaheel, Mohammed Fattah, and Mohammed Alshehri (Taif University, Saudi Arabia)
- 2. AI Based Data Architecture Impact Analysis**
Debasis Chanda (MDI Murshidabad, India)
- 3. A biometric for shark dorsal fins based on boundary descriptor matching**
Taina Coleman and Jucheol Moon (California State University Long Beach)
- 4. A Generic Model of the World and Intelligence**
Harris Wang (Athabasca University, Canada)

3:00 p.m. – 3:30 p.m. COFFEE BREAK, Coronado Foyer

SESSION 3:**SPECIAL SESSION ON COMPUTER APPLICATIONS**

Monday, September 30, 3:30 p.m. – 5:30 p.m., Room: Coronado A
Session Chair: Narayan Debnath (Eastern International University, Vietnam)

- 1. A Novel Approach Toward Designing a Non-DHT Based Structured P2P Network Architecture**
Indranil Roy, Bidyut Gupta, Banafsheh Rekabdar and Henry Hexmoor (Southern Illinois University)
- 2. Efficient Capacity-Constrained Multicast in RC-Based P2P Networks**
Koushik Maddali, Banafsheh Rekabdar, Swathi Kaluvakuri and Bidyut Gupta (Southern Illinois University)
- 3. Efficient Algorithm For L(3,2,1)-Labeling of Cartesian Product Between Some Graphs**
Sumonta Ghosh, Prakhar Pogde (National Institute of Technology, India), Narayan C. Debnath (Eastern International University, Vietnam) and Anita Pal (National Institute of Technology, India)
- 4. Stock Price Prediction Using LSTM on Indian Share Market**
Soumik Bose, Achyut Ghosh (University of Calcutta, India), Giridhar Maji (Asansol Polytechnic, India), Narayan Debnath (Eastern International University, Vietnam) and Soumya Sen (University of Calcutta, India)
- 5. Blockchain Technology applied to Electronic Health Records**
Suboh M Alkushyini, Du'a M Alzaleq (Minnesota State University Mankato) and Nadine L Gadjou Kengne (University of Wisconsin-Platteville)

Tuesday, October 1, 2019

8:00 a.m. – 3:00 p.m. REGISTRATION – Coronado Foyer (Bay Tower).

8:00 a.m. – 9:00 a.m. Coffee, Tea and Pastries - Coronado Foyer.

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

Dr. Gordon Lee

Department of Electrical and Computer Engineering, San Diego State University, USA

"Cyber Intelligence: Privacy and Security – What Should We Share in the Internet of Things and Big Data Environment?"

Location: Room: Coronado A

Session Chair: Dr. Gongzhu Hu, Central Michigan University, USA

10:00 a.m. – 10:30 a.m. COFFEE BREAK, Coronado Foyer

SESSION 4:

SOFTWARE ENGINEERING AND ALGORITHMS

Tuesday, October 1, 10:30 a.m. - 12:30 p.m., Room: Coronado A

Session Chair: Gongzhu Hu (Central Michigan University)

- 1. An Algorithmic Approach for Finding Minimum Spanning Tree in a Intuitionistic Fuzzy Graph**
Kartick Mohanta (National Institute of Technology, India), Arindam De (Saroj Mohan Institute of Technology, India), Narayan C. Debnath (Eastern International University, Vietnam) and Anita Pal ((National Institute of Technology, India)
- 2. High-Dimensionality Graph Data Reduction Based on Proposing A New Algorithm**
Lamyaa Al-Omairi, Jemal Abawajy, Morshed Chowdhury and Tahsien Al-Quraishi (Deakin University, Australia)
- 3. Descending auction model using mari considering the consumer market**
Tomoki Morimoto and Satoshi Takahashi (The University of Electro-Communications, Japan)
- 4. A Software Architecture for Handling Complex Critical Section Constraints on Multiprocessors in a Fault-Tolerant Real-Time Embedded System**
Jia Xu (York University, Canada)
- 5. Towards a Microservice Architecture for the Manufacturing Operations Layer**
Christoph Wunck (Emden/Leer University of Applied Sciences, Germany)

**12:30 p.m. – 2:30 p.m. CONFERENCE LUNCHEON
AND BEST PAPER AWARDS**

LOCATION: Point Loma Room

SESSION 5:**CAINE-SEDE JOINT SESSION ON CYBERSECURITY**

Tuesday, October 1, 2:30 p.m. – 5:00 p.m., Room: Coronado A
Session Chair: Maximilian Etschmaier (Florida State University)

- 1. A Purposeful Systems Design Approach for Cybersecurity [CAINE]**
Maximilian M. Etschmaier, (Florida State University)
- 2. Elevating Beneficence in Cyberspace with Situational Trust [CAINE]**
Kendall E. Nygard, Ahmed Bugalwi, Maryam Alruathi, Aakanksha Rastogi, Krishna Kambhampaty and Pratap Kotala, (North Dakota State University)
- 3. Cyber Threat Discovery from Dark Web [SEDE]**
Azene Zenebe (Bowie State University), Mufaro Shumba (Univ. of Maryland at College Park), Andrei Carillo (Bowie State University) and Sofia Cuenca (Farmingdale State College)

3:30 p.m. – 3:45 p.m. COFFEE BREAK, Coronado Foyer

SESSION 6:**CAINE-SEDE JOINT PANEL ON CYBERSECURITY**

Wednesday, October 1, 3:45 am–5:30 am, Room: Coronado A.
Moderator: Gordon Lee (San Diego State University)

Panel: Issues in and Alternative Design Approaches for Security in Cyberspace

Panelists:

- Maximilian Etschmaier (Florida State University)
- Gordon Lee (San Diego State University)
- Kendall E. Nygard (North Dakota State University)
- Stuart Rubin (Naval Information Warfare Center -NIWC- Pacific)
- Lydia Bouzar (Universite d'Algiers, Algeria)
- Azene Zenebe (Bowie State University)

8:00 a.m. – 10:00 a.m. REGISTRATION – Coronado Foyer (Bay Tower).

8:00 a.m. – 8:30 a.m. Coffee, Tea and Pastries - Coronado Foyer.

SESSION 7:

COMPUTER APPLICATIONS

Wednesday, October 2, 8:30 am–11:00 am, Room: Coronado A.

Session Chair: Yan Shi (University of Wisconsin-Platteville)

- 1. Biomedical Application of the Evolutionary Higher-Order Spectrum**
Abdullah Al-Shoshan and Abdulmalik Al-Shoshan (Qassim University, Saudi Arabia)
- 2. Augmented Reality Application to Enhance Training of Lumbar Puncture Procedure: Preliminary Results**
Nikolay Sargsyan, Sathish Akula, Robertson Bassy, Jueting Liu, Cheryl Seals, Xin Wei (Auburn University) and Jeremy White (Edward Via College of Osteopathic Medicine)
- 3. Intercross: a Breeding Application for High-throughput Phenotyping**
Chaney Courtney and Mitchell Neilsen (Kansas State University)
- 4. A Strategy to Evaluate and Measure the Degree of Openness of Cloud Services Environment**
Narayan Debnath (ISCA), Mario Peralta, Carlos Salgado, Lorena Baigorria, Germán Montejano, Daniel Riesco (Naturales Universidad Nacional de San Luis, Argentina) and Emdad Ahmed (Miami University-Oxford)
- 5. CBR-ODAF: A Case-Based Reasoning for the Online Diagnosis of All Types of Faults in Automated Production Systems**
Nourhène Ben Rabah and Ines Ben Tekaya (University Paris 1 Pantheon Sorbonne, France)
- 6. Prototype Implementation of Temperature Control System with CAN and FreeRTOS on STM32F407 Discovery Boards**
Venkat Margapuri and Mitchell Neilsen (Kansas State University)