Schedule Book

8th Annual Conf. on
Computational Science &
Computational Intelligence
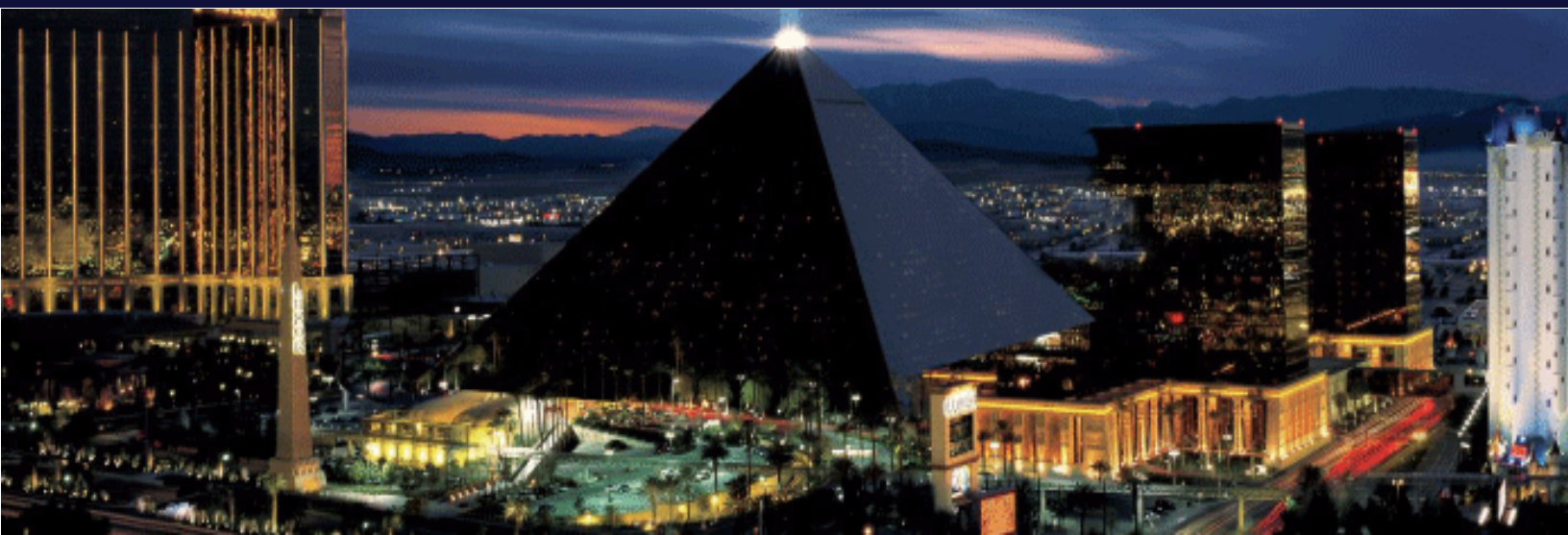
CSCI

December

15-17

2021

Las Vegas | Nevada | USA

Editors
Hamid R. Arabnia
Leonidas Deligiannidis, Fernando G. Tinetti
Quoc-Nam Tran

CSCI 2021 CONFERENCE SCHEDULE

The 2021 International Conference on Computational Science and Computational Intelligence

https://www.american-cse.org/csci2021/

December 15-17, 2021
Luxor (an MGM Resorts International), 3900 Las Vegas Blvd South,
Las Vegas, Nevada 89119, USA

Note that the title of presentations and authors' names that appear in the schedule below were extracted from the papers that were submitted to the EVALUATION web site. The official published proceedings/book will have any and all changes/revisions that authors may have done to the title and/or authors lists in the final version of their manuscripts.

ALL TIMES ARE GIVEN IN TERMS OF USA PACIFIC TIME ZONE.

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CSCI 2021 CONFERENCE SCHEDULE

The 2021 International Conference on Computational Science and Computational Intelligence

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December 15-17, 2021
Luxor (an MGM Resorts International), 3900 Las Vegas Blvd South,
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<mark>PLEASE NOTE THAT ALL TIMES MENTIONED IN THIS DOCUMENT ARE IN TERMS OF LAS VEGAS TIME-ZONE (USA Pacific Time-zone).</mark>

December 15

```
                    DECEMBER 15, 2021
THERE ARE TWO SETS OF CONCURRENT SESSIONS ON December 15, 2021; ONE
SET OF SESSIONS (ON-SITE PRESENTATIONS) WILL BE HELD IN BALLROOMS
GALLERIA B-C AND THE OTHER SET OF SESSIONS WILL BE ONLINE (THE ZOOM
LINK IS ALREADY PROVIDED TO SPEAKERS AND ALL REGISTERED AUTHORS).


7:00am - 5:00pm:  REGISTRATION
                  (LOCATION: Lotus Ballroom 1)



                  ON-SITE PRESENTATIONS & ACTIVITIES (DECEMBER 15)
                  ================================================

07:30 - 08-20am:  CONTINENTAL BREAKFAST
                  (LOCATION: Lotus Ballroom 1)

08:20 - 08:40am:  OPENING REMARKS - December 15, 2021, Wednesday;
                  CSCI 2021 Steering Committee representative,
                  Professor Emeritus Hamid R. Arabnia
                  Department of Computer Science, University of Georgia, USA;
                  Editor-in-Chief, The Journal of Supercomputing (Springer);
                  Editor, Transactions of Computational Science & Computational
                  Intelligence (Springer)
                  (LOCATION: Ballrooms Galleria B-C)

08:40 - 09:20am:  PANEL DISCUSSION:
                  AUTOMATION: IMPACT ON EMPLOYMENT AND POLITICS
                  Speaker and Moderator: Dr. Hamid R. Arabnia
                  + Audience Participation
                  (LOCATION: Ballrooms Galleria B-C)

09:20 - 09:40am:  BREAK (Refreshments)
                  (LOCATION: Lotus Ballroom 1)
```

SESSION 1-WED: **BIG DATA AND DATA SCIENCE + SOCIAL NETWORK ANALYSIS**
                        Chairs: TBA
                        December 15, 2021 (Wednesday); 09:40am - 12:00pm
                        (LOCATION: Ballrooms Galleria B-C)

09:40 - 10:00am: Sentence Complexity
                   Ron Coleman
                   Computer Science Department, Marist College, Poughkeepsie,
                   New York, USA

10:00 - 10:20am: Enhancing Textual Knowledge Discovery using a
                   Context-Awareness Approach
                   Nour Matta*, Nada Matta, Evan Giret, Nicolas Declerqc
                   LIST3N, University of Technology of Troyes, Troyes, France;
                   Data Department, Namkin, Troyes, France;
                   Namkin, Troyes, France

10:20 - 10:40am: Prototyping: Sample Selection for Imbalanced Data
                   Edward Schwalb
                   Schwalb Consulting LLC, USA

10:40 - 11:00am: Data Visualization Tool for Covid-19 and Crime Data
                   Sean Walker, Sharad Sharma
                   Department of Computer Science, Bowie State University,
                   Bowie, Maryland, USA

11:00 - 11:20am: Data Analysis of Crime and Rates of Hospitalization due
                   to COVID-19
                   Tyren Walker, Sharad Sharma
                   Department of Computer Science, Bowie State University,
                   Bowie, Maryland, USA

11:20 - 11:40am: Time Series Analysis of COVID-19 Cases in Humboldt County
                   Soeon Park, Mohammed Mahmoud, Sherrene Bogle
                   Humboldt State University, Arcata, California, USA;
                   Oakland University, Rochester, Michigan, USA

11:40 - 12:00pm: Optimized Ranking-based Community Detection
                   Matin Pirouz
                   California State University, Fresno, California, USA

12:00 - 01:00pm: LUNCH (On Your Own)

SESSION 2-WED: **SOCIAL NETWORK ANALYSIS, SOCIAL MEDIA, & MINING**
                        Chairs: TBA
                        December 15, 2021 (Wednesday); 01:00pm - 02:00pm
                        (LOCATION: Ballrooms Galleria B-C)

01:00 - 01:20pm: An Adaptive Approach for Fake News Detection in Social Media:
                   Single vs Cross Domain
                   Shubhangi Rastogi, Shabeg Singh Gill, Divya Bansal
                   Cyber Security Research Centre, Punjab Engineering College,
                   Chandigarh, India; Computer Science & Social Sciences,
                   Indraprastha Institute of IT, Delhi, India

01:20 - 01:40pm: The Impact of Social Media on HCI
                   Daiyaan Ijaz, Fady Nissan, Henry Dare, Jonathan Williams,
                   Sean Radatz, William Parker, Sherrene Bogle, Mohammed Mahmoud
                   Department of Computer Science and Engineering, Oakland
                   University, Rochester, Michigan, USA;
                   Department of Computer Science, Humboldt State University,
                   Arcata, California, USA

01:40 - 02:00pm: Time is Important in Fake News Detection: A Short Review
Shubhangi Rastogi, Divya Bansal
Cyber Security Research Centre, Punjab Engineering College
(Deemed to be university), Chandigarh, India

SESSION 3-WED: ARTIFICIAL INTELLIGENCE AND APPLICATIONS
Chairs: TBA
December 15, 2021 (Wednesday); 02:00pm - 03:00pm
(LOCATION: Ballrooms Galleria B-C)

02:00 - 02:20pm: On the Practical Uses of Experimental Adversarial Neural
Cryptography
Korn Sooksatra, Pablo Rivas
School of Engineering and Computer Science, Department of
Computer Science, Baylor University, Texas, USA

02:20 - 02:40pm: Stable Parallel Training of Wasserstein Conditional
Generative Adversarial Neural Networks
Massimiliano Lupo Pasini, Junqi Yin
Computational Sciences and Engineering Division,
Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA;
National Center for Computational Sciences Division,
Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

02:40 - 03:00pm: Hybrid Quantum Variational Autoencoders for Representation
Learning
Pablo Rivas, Liang Zhao, Zhengrong Zhang, Javier Orduz
School of Engineering and Computer Science, Department of
Computer Science, Baylor University, Texas, USA;
Marketing Department, St. Ambrose University, Davenport,
Iowa, USA; College of Arts & Sciences, Department of
Physics, Baylor University, Texas, USA

03:00 - 03:40pm: BREAK (Refreshments) & POSTERS
December 15, 2021 (Wednesday)
(LOCATION: Lotus Ballroom 1)

O. A Computational Approach to Identify Transcription Factor
Binding Sites Containing Spacer Regions
Punithavathi Sundaramurthy, Wendy Lee, Brandon White
Computer Science Department, San Jose State University,
California, USA; Biological Sciences Department,
San Jose State University, California, USA
O. LogicGAN-based Data Augmentation Approach to Improve
Adversarial Attack DNN Classiffiers
Christophe Feltus
Luxembourg Institute of Science and Technology (LIST),
Luxembourg
O. Classification of Compton Camera Based Prompt Gamma Imaging
for Proton Radiotherapy by Random Forests
Carlos A. Barajas, Gerson C. Kroiz, Matthias K. Gobbert,
Jerimy C. Polf
Department of Mathematics and Statistics, University of
Maryland, Baltimore County, Maryland, USA;
Department of Radiation Oncology, University of Maryland
School of Medicine, Baltimore, Maryland, USA

O. What Do I Want? Supporting the Incorporation of Individual
   Patient Preferences for Decision Support in Breast
   Cancer Therapy
   Marie Bommersheim, Patrick Philipp
   Fraunhofer Institute of Optronics, System Technologies and
   Image Exploitation IOSB, Karlsruhe, Germany

O. Decision Making on School Closure Based on Correlation
   Analysis During COVID-19 Pandemic
   Iyke Maduako, Kwon Ryul Cha
   Office of Global Innovation, UNICEF, New York, USA;
   Cumberland Valley HS, Mechanicsburg, PA, USA

O. The Effect of Web-toon Content on Ego-identity and Ego-
   Resilience: Focused on Middle and High School Students
   In-Hee Cho, So-Young Kim, Ji-Yun Oh, Sung-Min Cho,
   Sung-Hoon Park
   Dankook University, Media Strategy Institute, Chungbuk
   National University, Chungju, Chungbuk, Korea;
   Department of Computer Engineering, Chungbuk National
   University, Chungju, Chungbuk, Korea

O. Design of a New Innovative and Systematic Education Program
   for Tech-oriented Startups and Scaleups Leaders
   Dong H. Lee, Hwa Jeong, Seo Jinung An, Jong H. Lee
   Center for Technology Startup Education Team, Research
   Institute of Convergence DGIST, Daegu, Korea

O. Understanding How the Relative Abundance of Candida Species
   Impacts Transcriptional Regulation in Co-Culture Biofilms
   Diksha Kool, Wendy Lee, Katy Kao
   Department of Computer Science, San Jose State University,
   California, USA; Department of Chemical and Materials
   Engineering, San Jose State University, California, USA

O. ...

SESSION 4-WED: **ARTIFICIAL INTELLIGENCE AND APPLICATIONS + Security + Computational Science**
Chairs: TBA
December 15, 2021 (Wednesday); 03:40pm - 06:20pm
(LOCATION: Ballrooms Galleria B-C)

03:40 - 04:00pm: Artificial Intelligence-Based Cognitive Radar Architecture
                  Arkadiusz Czuba
                  Warsaw University of Technology, Warsaw, Poland;
                  PIT-RADWAR S.A., Warsaw, Poland

04:00 - 04:20pm: Development of Algorithm to Predict Arrhythmias based on
                  Ensemble Network using Electrocardiogram
                  Siho Shin, Mingu Kang, Gengjia Zhang, Jaehyo Jung,
                  Meina Li, Youn Tae Kim
                  Department of IT Fusion Technology, AI Healthcare Research
                  Center, Chosun University, Dong-gu, Gwangju, Korea;
                  College of Instrumentation and Electrical Engineering,
                  Jilin University, Jilin, China

04:20 - 04:40pm: Adversarial Training Negatively Affects Fairness
                  Korn Sooksatra, Pablo Rivas
                  School of Engineering and Computer Science, Department of
                  Computer Science, Baylor University, Texas, USA

04:40 - 05:00pm: A Study on Deep Learning Approach to Optimize Solving
                  Construction Problems
                  Phillip Roshon, Feng-Jen Yang
                  Department of Computer Science, Florida Polytechnic
                  University, Lakeland, Florida, USA

05:00 - 05:20pm: First Considerations on How to Design a Honeypot to Protect
                  (Swarms of) Drones by Fake Mass Deployment or by Using a Twin to
                  Fake Interactions with the Physical World
                  Serge Chaumette, Titien Cubilier
                  Univ. Bordeaux, Bordeaux INP, CNRS, LaBRI, Talence, France;
                  Univ. Bordeaux, Talence, France

05:20 - 05:40pm: An Algorithm to Solve Systems of Nonlinear Differential-Algebraic
                  Equations with Extraordinary Efficiency Even at High Demanded Precisions
                  Josef Dobes, David Cerny
                  Department of Radio Electronics Technicka, Czech Technical
                  University in Prague, Praha, Czech Republic
05:40 - 06:00pm: FREE SLOT / TBA
06:00 - 06:20pm: FREE SLOT / TBA

ONLINE PRESENTATIONS (DECEMBER 15 - Wednesday)
===
The online presentations are scheduled from 07:00am
till 10:00pm daily - this is to serve online speakers,
online attendees, and participants who are residing in
different time zones. The conference has also granted the
request from the administrations of 12 institutions to
live stream the online sessions for their classrooms
(one connection per classroom / institution).
IMPORTANT NOTE: as a professional courtesy we expect
conference speakers to participate in other speakers'
presentations - also, the moderators may have to shift
presentations in cases where there are speaker no-shows.

SESSION 1-ONLINE: COMPUTATIONAL SCIENCE: IoT, SENSOR NETWORKS, HPC, AND
                  APPLICATIONS
                  Chairs:
                  December 15, 2021 (Wednesday); 07:00am - 10:00am
                  (ONLINE - ZOOM)

07:00 - 07:20am: A Novel Modular Low Power and Low Cost IoT Wireless Sensor
                  Node for Air Quality Monitoring
                  Matthew Meli, Edward Gatt, Owen Casha, Ivan Grech,
                  Joseph Micallef
                  Department of Microelectronics and Nanoelectronics, University
                  of Malta, Msida, Malta

07:20 - 07:40am: Accelerating Workload Processing with MPI for Porter's
                  Stemming Algorithm
                  Eduardo Colmenares, Heng Wu
                  Department of Computer Science, Midwestern State University,
                  Wichita Falls, Texas, USA;
                  Department of Computer Science, West Virginia State University,
                  Institute, West Virginia, USA

07:40 - 08:00am: Out-of-GPU FFT: A case study in GPU prefetching
                  Peter Pirgov, Lenore Mullin, Rishi Khan
                  Extreme Scale Solutions, Newark, Delaware, USA;
                  MoA: Provably Optimal Tensors, Arlington, Virginia, USA

08:00 - 08:20am: Optimal Balance of Privacy and Utility with Differential
                  Privacy Deep Learning Frameworks
                  Olivera Kotevska, Folami Alamudun, Christopher Stanley
                  Computer Science and Mathematics, Oak Ridge National
                  Laboratory, Oak Ridge, Tennessee, USA;
                  Computational Sciences and Engineering, Oak Ridge National
                  Laboratory, Oak Ridge, Tennessee, USA

08:20 - 08:40am: On Signaling Dysregulation in Cancer
                  Youcef Derbal
                  Ted Rogers School of Information Technology Management,
                  Ryerson University, Toronto, Canada

08:40 - 09:00am: Analyzing a Low-bit Rate Audio Codec - Codec2 - on an FPGA
                  Peter Jamieson, Santhiya Sampath Kumar
                  Electrical and Computer Engineering, Miami University,
                  Oxford, Ohio, USA

09:00 - 09:20am: Safe Social Internet of Thing for Urban Mobility Services
                  Matteo Anedda, Mauro Fadda, Massimo Farina, Roberto Girau,
                  Mariella Sole, Daniele D. Giusto
                  University of Cagliari, Italy; University of Sassari, Italy;
                  University of Bologna, Italy

09:20 - 09:40am: A Conceptual Framework for a Blockchain-based Tax Payment
                  Financial Service
                  Abhishek Phadke, F. Antonio Medrano, Jaimin Brahmbhatt
                  Department of Computer Science, Texas A&M University,
                  Corpus Christi, Texas, USA

09:40 - 10:00am: Model-Based Security Testing of Vehicle Networks
                  Florian Sommer, Reiner Kriesten, Frank Kargl
                  Institute of Energy Efficient Mobility, Karlsruhe University
                  of Applied Sciences, Karlsruhe, Germany;
                  Institute of Distributed Systems, Ulm University, Ulm, Germany

SESSION 2-ONLINE: COMPUTATIONAL INTELLIGENCE: LEARNING STRATEGIES AND
DATA SCIENCE
Chairs:
December 15, 2021 (Wednesday); 10:00am - 01:00pm
(ONLINE - ZOOM)

10:00 - 10:20am: Implementation of PCA Enabled Support Vector Machine using
                  Cytokines to Differentiate Smokers versus Non-smokers
                  Seema Singh Saharan, Pankaj Nagar, Kate Townsend Creasy,
                  Eveline O. Stock, James Feng, Mary J. Malloy, John P. Kane
                  Department of Statistics, University of Rajasthan, Jaipur, India;
                  University of California Berkeley Extension, California, USA;
                  University of California, San Francisco, California, USA

10:20 - 10:40am: Application of Machine learning Ensemble Super Learner for
                  Analysis of the Cytokines Transported by High Density
                  Lipoproteins (HDL) of Smokers and Non-smokers
                  Seema Singh Saharan, Pankaj Nagar, Kate Townsend Creasy,
                  Eveline O. Stock, James Feng, Mary J. Malloy, John P. Kane
                  Department of Statistics, University of Rajasthan, Jaipur, India;
                  University of California Berkeley Extension. California, USA;
                  University of California, San Francisco, California, USA

10:40 - 11:00am: A User Self-Design Collaborative Web System for Self-Directed
                  Health Learning: A Covid-19 Awareness Project
                  Alireza Ebrahimi
                  State University of New York at Old Westbury, Old Westbury,
                  New York, USA

11:00 - 11:20am: Determining the Motivations to Use Computer-Mediated
                  Communication
                  Junghyun Nam
                  University of North Georgia, Georgia, USA

11:20 - 11:40am: Uncertainty Estimation for Twitter Inference
                   Meng Hsiu Tsai, Nicole Marie Ely, Yingfeng Wang
                   Department of Computer Science and Engineering, University of
                   Tennessee at Chattanooga, Tennessee, USA; Department of Data
                   Science and Business Analytics, Florida Polytechnic
                   University, Lakeland, Florida, USA

11:40 - 12:00pm: Effects of Different Recommendation Algorithms on Structure
                   of Social Networks
                   Sepideh Banihashemi, Abdolreza Abhari
                   Department of Computer Science, Ryerson University,
                   Toronto, ON, Canada

12:00 - 12:20pm: Platform Neutrality and the Global Balance of Powers
                   Marcel S. Stolz
                   Department of Computer Science, Cybersecurity Analytics Group,
                   Global Cybersecurity Capacity Centre, University of Oxford,
                   Oxford, United Kingdom, UK
                   marcel.stolz@oriel.ox.ac.uk

12:20 - 12:40pm: Mining the Impact of Social Networking on High-Frequency
                   Financial Data
                   Ray Hashemi, Omid Ardakani, Chanchal Tamrakar, Jeffery Young
                   Department of Computer Science, Georgia Southern University,
                   Savannah, Georgia, USA; Department of Economoics, Georgia
                   Southern University, Savannah, Georgia, USA; Department of
                   Marketing, Georgia Southern University, Savannah,
                   Georgia, USA; Department of Computer Sciecne, Clemson
                   University, Clemson, South Carolina, USA

12:40 - 01:00pm: Visually Compatible Home Decor Recommendations Using Object
                   Detection and Product Matching
                   Unaiza Ahsan, Yuanbo Wang, Alexander Guo, Kevin D. Tynes Jr.,
                   Tianlong Xu, Estelle Afshar, Xiquan Cui
                   The Home Depot, USA; Georgia Institute of Technology,
                   Atlanta, Georgia, USA

SESSION 3-ONLINE: DATA ANALYTICS AND ARTIFICIAL INTELLIGENCE + CS EDUCATION
**   + COMPUTE INTENSIVE APPLICATIONS**
**   Chairs:**
**   December 15, 2021 (Wednesday); 01:00pm - 04:00pm**
**   (ONLINE - ZOOM)**

01:00 - 01:20pm: Atomic Layer Deposition Optimization Using Convolutional
                   Neural Networks
                   Julian Cagnazzo, Osama "sam" Abuomar, Angel-Yanguas Gil,
                   Jeffrey W. Elam
                   Department of Engineering, Computing, and Mathematical
                   Sciences, Lewis University, Romeoville, Illinois, USA;
                   Applied Materials Division, Argonne National Laboratory,
                   Argonne, Illinois, USA

01:20 - 01:40pm: Network Intrusion Detection System Using Principal Component
                   Analysis Algorithm and Decision Tree Classifier
                   Oyeyemi Osho, Sungbum Hong, Tor A. Kwembe
                   Department of Computational & Enabled Science and
                   Engineering, Jackson State University, Mississippi, USA;
                   Department of Electrical & Computer Engineering and
                   Computer Science, Jackson State University, Mississippi, USA;
                   Department of Mathematics & Statisyical Sciences, Jackson
                   State University, Mississippi, USA

01:40 - 02:00pm: A Modified Clustering Using Representatives (CURE) to Enhance and Optimize Tracking and Monitoring of Maritime Traffic in Real-time Using Automatic Identification System (AIS) Data
Cheronika Manyfield-Donald, Tor A. Kwembe, Jing-Ru C. Cheng
Computational and Data-Enabled Science and Engineering, Jackson State University, Mississippi, USA;
Department of Mathematics and Statistical Sciences, Jackson State University, Mississippi, USA; Information Technology Lab., Engineer Research and Development Center, U.S. Army Corps of Engineers, Halls Ferry, Vicksburg, Mississippi, USA

02:00 - 02:20pm: A Dev-Ops Practicum Course for Information Technology Majors
Adam Kaplan
Department of Computer Science, California State University Northridge, Northridge, California, USA

02:20 - 02:40pm: Mechanical Anomaly Detection on an Embedded Microcontroller
Mansoureh Lord, Adam Kaplan
Department of Computer Science, California State University Northridge, Northridge, California, USA

02:40 - 03:00pm: Optimization of a Classical Algorithm for the Alignment of Genomic Sequences with Artificial Bee Colony
Raul Magdaleno Penaloza*, Gerardo Reyes Salgado, Andrea Magadan Salazar
Tecnologico Nacional de Mexico/CENIDET, Cuernavaca Morelos, Mexico

03:00 - 03:20pm: Improving Gene Expression Prediction of Cancer Data Using Nature Inspired Optimization Algorithms
Payal Patel, Kalpdrum Passi, Chakresh Kumar Jain
Department of Mathematics and Computer Science, Laurentian University, Sudbury, Ontario, Canada; Department of Biotechnology, Jaypee Institute of Information Technology, Noida, India

03:20 - 03:40pm: Application of Machine Learning to Sleep Stage Classification
Andrew Smith, Hardik Anand, Snezana Milosavljevic, Katherine M. Rentschler, Ana Pocivavsek, Homayoun Valafar
Department of Computer Science and Engineering, University of South Carolina, Columbia, South Carolina, USA;
Department of Pharmacology, Physiology, and Neuroscience, University of South Carolina School of Medicine, Columbia, South Carolina, USA

03:40 - 04:00pm: A Review of Vehicular Micro Clouds
Abhishek Phadke, F. Antonio Medrano, Stanislav Ustymenko
Department of Computer Science, Texas A&M University, Corpus Christi, Texas, USA

SESSION 4-ONLINE: SIGNAL AND IMAGE PROCESSING, PATERN RECOGNITION, INFORMATION ENGINEERING, AND ALGORITHMS + SECURITY
Chairs:
December 15, 2021 (Wednesday); 04:00pm - 07:00pm
(ONLINE - ZOOM)

04:00 - 04:20pm: Proposal of an Application for Sharing Daily Ambient Sound
Mizuki Watanabe, Takayuki Fujimoto
Information Sciences and Arts of Graduate School, Toyo University, Tokyo, Japan

04:20 - 04:40pm: Scalability Evaluation of a Per-User Access Control Framework
                  Arata Endo*, Chunghan Lee, Susumu Date
                  Cybermedia Center, Osaka University, Osaka, Japan;
                  Infotech, Toyota Motor Corporation, Tokyo, Japan

04:40 - 05:00pm: Development of Wireless Communication System for Reliable
                  Acoustic Data Collection Toward Anomaly Detection on
                  Mechanical Equipment
                  Chinari Takano, Shinya Fujino, Daiki Nobayashi, Kazuya Tsukamoto,
                  Mitsunori Mizumachi, Takeshi Ikenaga
                  Kyushu Institute of Technology, Fukuoka, Japan

05:00 - 05:20pm: Neighborhood Base Matched Morphological Filters:
                  Cross-fertilization with Linear Lowpass Filtering
                  Mahdi Khosravy, Neeraj Gupta, Olaf Witkowski, Antoine Pasquali
                  Computer Science and Engineering Department, Oakland
                  University, Rochester, Michigan, USA;
                  Cross Labs, Cross-Compass Ltd., Tokyo, Japan

05:20 - 05:40pm: A Study of DQN using VisionTransformer as an Image Extractor
                  Toshki Hatano, Toi Tsuneda, Satoshi Yamane, ...
                  Kanazawa University, Kanazawa, Japan

05:40 - 06:00pm: Proposal for the Virtual Library that Enables the User to
                  Control the Bookshelf Based on the Concept of Timeline
                  Xuezhen Li, Takayuki Fujimoto
                  Graduate School of Information Sciences and Arts,
                  Toyo University, Japan

06:00 - 06:20pm: Information Dissemination Model and Trend Forecast of Short
                  Video Social Network
                  Jiawei Han, Limin Jiang, Ying Xu, Jingwen Yang, Taotao Sun
                  Department of Cyberspace Security, Changchun University,
                  Changchun, China; Department of Administration, Changchun
                  University, Changchun, China

06:20 - 06:40pm: Impact of Patch Extraction Variables on Histopathological
                  Imagery Classification Using Convolution Neural Networks
                  Willmer R. Quinones, Murtaza Ashraf, Mun Yong Yi
                  Graduate School of Knowledge Service Engineering, KAIST,
                  Daejeon, South Korea

06:40 - 07:00pm: A Novel Traceback Technology for E-mail Sender Verification
                  Woo Young Park, Sang Hyun Kim, Duy Son Vu, Chang Han Song,
                  Hyeon Jo, Hee Soo Jung
                  Security Laboratory, Realsecu, Busan, South Korea;
                  Headquarter, Realsecu, Busan, South Korea

**SESSION 5-ONLINE: ARTIFICIAL INTELLIGENCE + DATA SCIENCE + SMART CITY + SOCIAL
                  NETWORKS AND NOVEL APPLICATIONS
                  Chairs:
                  December 15, 2021 (Wednesday); 07:00pm - 10:00pm
                  (ONLINE - ZOOM)**

07:00 - 07:20pm: Impact of COVID-19 and Social Measure on Behavioral
                  Intention in the Context of Online Learning Software
                  Minje Cho, Hyeon Jo
                  Hospitality and Tourism Institute, Duy Tan University,
                  Da Nang, Vietnam;
                  IT Laboratory, Realsecu, Busan, South Korea

07:20 - 07:40pm: Effects of Social Distancing Intention, Affective Risk
                  Perception, and Cabin Fever Syndrome on Perceived Value of
                  E-learning
                  Hyeon Jo
                  IT Laboratory, Realsecu, Busan, South Korea

07:40 - 08:00pm: Enhanced Cybersecurity for Safe Smart World
                  ChoongHee Han
                  Security Information Strategy Office, Korea Power Exchange,
                  Naju-si Jeollanam-do, Republic of Korea

08:00 - 08:20pm: Key Factors Affecting Mobile App Usage Intensity During
                  Isolation: A Cross-National Study
                  Hyeon Jo
                  IT Laboratory, Realsecu, Busan, South Korea

08:20 - 08:40pm: A Load Balancing Scheme based on Deep Learning in
                  Blockchain Network
                  Hye-Young Kim, Ji-Hyun Lee
                  School of Games, Major of Game Software, Hongik University,
                  Sejong-si, South Korea

08:40 - 09:00pm: Who Discussed Further Global Warming in Social Networks?
                  A Big Graph Analysis Perspective
                  Mauro Leon-Payano, Miguel Nunez-del-Prado, Hugo Alatrista-Salas
                  Pontificia Universidad Catolica del Peru, Lima, Peru;
                  Universidad de Ingenieria y Tecnologia, Lima, Peru

09:00 - 09:20pm: Digital Measurement of Spatial Ability using a Virtual
                  Reality Environment
                  Jhasmani Tito, Tania Basso, Regina Moraes
                  University of Campinas, Limeira, Brazil;
                  University of Coimbra, Coimbra, Portugal

09:20 - 09:40pm: Distributed Algorithms for k-Coverage in Mobile Sensor Networks
                  Rinku Sen, Rajib Kumar Das
                  Department of Computer Science and Engineering, University of
                  Calcutta, Kolkata, India

09:40 - 10:00pm: Taxonomy for Malware Detection to Enhance the Security of
                  Smart Devices using AI
                  Anusha Thapa, Abeer Alsadoon, Sreekanth Gopalakrishnan Nair,
                  Muhammad Siddiqi, Rashidul Mubasher, Rajesh Ampani,
                  Benoy Varghese, P.W.C. Prasad
                  Study Group Australia, Sydney, Australia; Kent Institute
                  Australia, Information Technology Department, Sydney, Australia;
                  Asia Pacific International College (APIC), Information
                  Technology Department, Sydney, Australia; Advanced Security
                  Solution, Doha, Qatar

10:00 – 10:05pm: Estimation of Problematic Portions in Presentation Slides
                  Based on Analysis of Audience's Unconscious Reactions and Slide Data
                  Ko Saito, Ryo Onuma, Hiroki Nakayama, Hiroaki Kaminaga,
                  Youzou Miyadera, Shoichi Nakamura
                  Department of Computer Science and Mathematics, Fukushima
                  University, Fukushima, Japan; Department of Computer
                  Science, College of Liberal Arts, Tsuda University,
                  Tokyo, Japan; Global Education Center, Waseda University,
                  Tokyo, Japan; Faculty of Education, Tokyo Gakugei
                  University, Tokyo, Japan

10:05 – 10:10pm: Discussion Visualization based On Analysis of Comments to Web News
                  Hiroki Wakabayashi, Hiroki Nakayama, Ryo Onuma,

Hiroaki Kaminaga, Youzou Miyadera, Shoichi Nakamura
Department of Computer Science and Mathematics, Fukushima
University, Kanayagawa, Fukushima, Japan;
Global Education Center, Waseda University, Shinjukuku,
Tokyo, Japan; Department of Computer Science, College of
Liberal Arts, Tsuda University, Kodaira, Tokyo, Japan;
Division of Natural Science, Tokyo Gakugei University,
Nukuikita, Koganei, Tokyo, Japan

DECEMBER 16, 2021
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7:00am - 5:00pm: REGISTRATION
                   (LOCATION: Lotus Ballroom 1)

                   ON-SITE PRESENTATIONS & ACTIVITIES (DECEMBER 16)
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07:30 - 08-20am: CONTINENTAL BREAKFAST
                   (LOCATION: Lotus Ballroom 1)

SESSION 5-THU: HEALTH INFORMATICS AND MEDICAL SYSTEMS +
                   SIGNAL PROCESSING AND IMAGING SCIENCE
                   Chairs: TBA
                   December 16, 2021 (Thursday); 08:20am - 10:00am
                   (LOCATION: Ballrooms Galleria B-C)

08:20 - 08:40am: Surgical Skill Training and Evaluation for a Peg Transfer
                   Task in a Three Camera Based-Laparoscopic Box-Trainer System
                   Fatemeh Rashidi Fathabadi, Janos L. Grantner, Saad A. Shebrain,
                   Ikhlas Abdel-Qader
                   Electrical & Computer Engineering, Western Michigan University,
                   Michigan, USA;
                   Surgery, Homer Stryker M.D. School of Medicine, Western
                   Michigan University, Michigan, USA

08:40 - 09:00am: Mental Stress Detection with Ensemble Model and Random
                   Cropping using Electrocardiogram
                   Mingu Kang, Siho Shin, Gengjia Zhang, Jaehyo Jung,
                   Meina Li, Youn Tae Kim
                   Department of IT Fusion Technology, AI Healthcare Research
                   Center, Chosun University, Dong-gu, Gwangju, Korea;
                   College of Instrumentation and Electrical Engineering,
                   Jilin University, Jilin, China

09:00 - 09:20am: Myolink: Emb-Based Inter-Human Wireless Neuroprosthetic
                   Controller
                   Kathleen Martin, Jimmy Lee, Andrew Kim, Yi Zhao, Shane Walsh,
                   Bahram Shafai
                   Department of Electrical and Computer Engineering,
                   Northeastern University, Boston, Massachusetts, USA

09:20 - 09:40am: A Symmetric Nonnegative Matrix Factorization Approach for
                   Image Reconstruction
                   Yueyang Wang, Bahram Shafai
                   Department of Electrical and Computer Engineering,
                   Northeastern University, Boston, Massachusetts, USA

09:40 - 10:00am: Weight Perception Analysis using Electroencephalographic Signals
                   Murtaza Aslam, Fozia Rajbdad, Omer M. Soysal
                   Electrical and Computer Engineering Department, Louisiana State
                   University, Baton Rouge, Louisiana, USA;
                   Computer Science Department, Southeastern Louisiana University,
                   Hammond, Louisiana, USA

10:00 - 10:20am: BREAK (Refreshments)
                   (LOCATION: Lotus Ballroom 1)

SESSION 6-THU: SOFTWARE ENGINEERING RESEARCH AND PRACTICE + COMPUTATIONAL
                   INTELLIGENCE
                   Chairs: Dr. Amjad Gawanmeh
                           University of Dubai, Dubai, UAE
                   December 16, 2021 (Thursday); 10:20am - 12:00pm
                   (LOCATION: Ballrooms Galleria B-C)

10:20 - 10:40am: A Comprehensive Framework for Measuring and Improving API Usability
                   Jeff Tian, Abdullah Bokhary, Sultan Alanazy
                   Department of Computer Science, Southern Methodist University,
                   Dallas, Texas, USA;   Department of Software Engineering,
                   College of Computer Science and Engineering, University of Jeddah,
                   Saudi Arabia;   College of Computer Science and IT,
                   Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia

10:40 - 11:00am: Crossed Analysis of Three-variable for Early Pre-diagnosis
                   of COVID-19
                   Ana Maria Campos Mora, Diego Sanchez Buitrago,
                   Leonardo Juan Ramirez Lopez
                   Engineering Faculty, Universidad Militar Nueva Granada, Bogota,
                   Colombia

11:00 - 11:20am: Modern HCI for Mobile Applications, Study and Challenges
                   Ali Abbiss, Brent Soloniewicz, Cameron Jordan, Chandler Connolly,
                   Chris Wiegand, Corey Dutkiewicz, Mohammed Mahmoud
                   Department of Computer Science and Engineering, Oakland University,
                   Rochester, Michigan, USA

11:20 - 11:40am: A Survey on Security and Human Related Challenges in Agile
                   Software Deployment
                   Neha Singh, Palak Patel, Soma Datta
                   University of Houston - Clear Lake, Houston, Texas, USA

11:40 - 12:00pm: Kabuki Explanation System Based on User's Knowledge and Interests
                   Miku Kawai, Jumpei Ono, Takashi Ogata
                   Faculty of Liberal Arts, The Open University of Japan, Wakaba,
                   Mihama, Chiba, Japan;   Faculty of Software and Information
                   Technology, Aomori University, Seishincho, Edogawa, Tokyo, Japan;
                   Faculty of Software and Information Science, Iwate Prefectural
                   University, Sugo, Takizawa, Iwate, Japan

12:00 - 01:00pm: LUNCH (On Your Own)

SESSION 7-THU: ARTIFICIAL INTELLIGENCE + INTERNET OF THINGS
                   Chairs: TBA
                   December 16, 2021 (Thursday); 01:00pm - 02:20pm
                   (LOCATION: Ballrooms Galleria B-C)

01:00 - 01:20pm: An Online Reinforcement Learning Approach for Solving the
                   Dynamic Flexible Job-Shop Scheduling Problem for Multiple
                   Products and Constraints
                   Nour El-Din Ali Said, Yassin Samaha, Eman Azab,
                   Lamia A. Shihata, Maggie Mashaly
                   German University in Cairo, Egypt

01:20 - 01:40pm: DDS-Cerberus: Ticketing Performance Experiments and Analysis
                   Andrew T. Park, Richard Dill, Douglas D. Hodson, Wayne C. Henry
                   Department of Electrical and Computer Engineering, Air Force
                   Institute of Technology, Wright-Patterson Air Force Base, USA

01:40 - 02:00pm: Modeling SQL Statement Correctness with Attention-Based
                   Convolutional Neural Networks
                   Pablo Rivas, Donald R. Schwartz
                   School of Engineering and Computer Science, Department of
                   Computer Science, Baylor University, Texas, USA;
                   School of Computer Science and Mathematics, Department of
                   Computing Technology, Marist College, New York, USA

02:00 - 02:20pm: Quantum Machine Learning: A Case Study of Grover's Algorithm
                   Bikram Khanal, Pablo Rivas, Javier Orduz
                   School of Engineering and Computer Science, Department of
                   Computer Science, Baylor University, Texas, USA

SESSION 8-THU: **SIGNAL & IMAGE PROCESSING + COMPUTER VISION**
                   Chairs: TBA
                   December 16, 2021 (Thursday); 02:20pm - 03:00pm
                   (LOCATION: Ballrooms Galleria B-C)

02:20 - 02:40pm: Application Note: uPolar - An Interactive 2D Visualization Tool
                   for Microscopic Time-series Images
                   Mehran Ghafari, Daniel Milman, Li Yang, Weiwei Dang, Hong Qin
                   University of Tennessee at Chattanooga, Tennessee, USA;
                   Baylor College of Medicine, Houston, Texas, USA

02:40 - 03:00pm: 3D Face Reconstruction from Front and Profile Images for Low
                   Computational Devices
                   Sankarshan Dasgupta, Mehdi R. Zargham
                   University of Dayton, Dayton, Ohio, USA

03:00 - 03:40pm: **BREAK (Refreshments) & POSTERS**
                   December 16, 2021 (Thursday)
                   (LOCATION: Lotus Ballroom 1)

                   O. Industry Connect Initiative: Partnering for Student Success
                      Bonnie Achee, Ghassan Alkadi, Matthew McNulty, Sandy Summers
                      Department of Computer Science, Southeastern Louisiana
                      University, Hammond, Louisiana, USA;
                      Office of Career Services, Southeastern Louisiana
                      University, Hammond, Louisiana, USA

                   O. Identifying Actionable Customer Behavior through Advanced
                      Analysis of Bank Transaction Data
                      Anna Nesvijevskaia, Vincent Martenot, Paul Fogel, and
                      Jean-Daniel Zucker
                      Laboratory DICEN IDF, CNAM, Quinten, Paris, France;
                      DataLab, Quinten, Paris, France; DataLab Senior Advisor,
                      Quinten, Paris, France;
                      IRD, UMMISCO, Sorbonne University, Bondy, France
                   O. High-density 3D Reconstruction in a Large Space Using
                      Single Camera and 2D LiDAR
                      Sangha Oh, Soon-Yong Park
                      School of Electronic and Electrical Engineering, Kyungpook
                      National University, Daegu, South Korea
                   O. An Overview of Log-Structured Merge Tree
                      Yiming Gao, Shun Gai
                      NICEX Lab, Changsha, China

SESSION 9-THU: **PARALLEL AND DISTRIBUTED PROCESSING + HPC + CLOUD COMPUTING**
Chairs: TBA
December 16, 2021 (Thursday); 03:40pm - 06:20pm
(LOCATION: Ballrooms Galleria B-C)

03:40 - 04:00pm: Persisting Trust in Emerging Hybrid-Clouds and 6G Systems
Muhammed Akif Agca, Djamel Khadraoui, Mehmet Naci Efe
TOBB ETU Computer Engineering, Ankara, Turkey;
Luxembourg Institute of Science and Technology / LIST,
Esch-Sur-Alzette, Luxembourg; Ekol Group, Istanbul, Turkey;
International University of Gorazde, Bosnia and Herzegovina

04:00 - 04:20pm: Prediction and Convergence Calculations using Rust-based
NAlgebra GLM
Noah W. Scott, Douglas D. Hodson, Richard Dill,
Michael R. Grimaila
Air Force Institute of Technology, WPAFB, Wright-Patterson
Air Force Base, Ohio, USA

04:20 - 04:40pm: Odd-Even Flexible Router for High Performance Network-on-Chips
Garrett Hentges, Mostafa Abdelrehim
California State University, Bakersfield, California, USA

04:40 - 05:00pm: Non-Blocking Technique for Parallel Algorithms with Global
Barrier Synchronization
Arturo Garza, Claudio A. Parra, Isaac D. Scherson
Department of Computer Science, University of California,
Irvine, California, USA

05:00 - 05:20pm: Continuous Variable Quantum Compilation
Federico Rueda, Sonia Lopez Alarcon
Department of Computer Engineering, Rochester Institute of
Technology, Rochester, New York, USA

05:20 - 05:40pm: Hierarchical and Density Aware Spectral Clustering Approach to
Server Placement for Collaborative Virtual Services
Sakir Yucel
Wexford, PA, USA

05:40 - 06:00pm: FREE SLOT / TBA

06:00 - 06:20pm: FREE SLOT / TBA

07:00 - 09:00pm: **CONFERENCE RECEPTION DINNER**
December 16, 2021 (Thursday); 07:00pm - 09:00pm
(LOCATION: Velvet Room Blue)

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ONLINE PRESENTATIONS (DECEMBER 16 - Thursday)
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The online presentations are scheduled from 07:00am
till 10:00pm daily - this is to serve online speakers,
online attendees, and participants who are residing in
different time zones. The conference has also granted the
request from the administrations of 12 institutions to
live stream the online sessions for their classrooms
(one connection per classroom / institution).
IMPORTANT NOTE: as a professional courtesy we expect
conference speakers to participate in other speakers'
presentations - also, the moderators may have to shift
presentations in cases where there are speaker no-shows.
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SESSION 6-ONLINE: TEACHING STRATEGIES + STEM & RECRUITMENT METHODS
                  Chairs:
                  December 16, 2021 (Thursday); 06:20 - 08:40am
                  (ONLINE - ZOOM)
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06:20 – 06:40am: Benchmarking the Software Engineering Undergraduate Program
Curriculum at Jordan University of Science and Technology
with the IEEE Software Engineering Body of Knowledge (SWEBOK V3.0)
Moh'd A. Radaideh
Department of Software Engineering,
Jordan University of Science and Technology, Jordan

06:40 – 07:00am: Shifting the Paradigms from Teaching Project Management to
Teaching Software Project Management at the Jordan University
of Science and Technology According to the IEEE Software
Engineering Management Knowledge Area
Moh'd A. Radaideh
Department of Software Engineering, Jordan University of
Science and Technology, Jordan

07:00 - 07:20am: The Power of Mentoring Programs in Retaining Women and
Black, Indigenous, Students of Color in Undergraduate
Computing Majors
Kristina Kramarczuk, Jandelyn Plane, Kathryn Atchison,
Maya Narayanasamy
College of Education, University of Maryland, College Park,
Maryland, USA; Department of Computer Science, University
of Maryland, College Park, Maryland, USA

07:20 - 07:40am: A Survey of Innovation in Computer Science Education with
Undergraduate Emphasis
Joel Weymouth, Ramesh K. Karne, Alexander L. Wijesinha
Computer and Information Sciences, Towson University,
Towson, Maryland, USA

07:40 - 08:00am: Cybersecurity Integration: Deploying Critical Infrastructure
Security and Resilience Topics into the Undergraduate Curriculum
Stephanie Lunn, Monique Ross, Jason Liu
Knight Foundation School of Computing and Information Sciences,
Florida International University, Miami, Florida, USA

08:00 - 08:20am: A Circular Framework from Branding to Recruitment in
                  Perspective of Higher Education
                  Miaoqing Chen, Ali A. Al-Babawat, Abeer Alsadoon, Srujal Patel,
                  Razwan Mohmed Salah, P.W.C. Prasad
                  Study Group Australia, Sydney, Australia; University of Duhok,
                  Duhok, Kurdistan, Region-Iraq; Kent Institute Australia,
                  Sydney, Australia; Australian Institute of Higher Education,
                  Sydney, Australia

08:20 - 08:40am: Modify Flipped Model of Co-regulation and Shared-regulation
                  Impact in Higher Education, and Role of Facilitator on
                  Student's Achievement
                  Aida Jafarian, Razwa Mohmed Salah*, Abeer Alsadoon,
                  Srujal Patel, Gustavo R. Alves, P.W.C. Prasad
                  Study Group Australia, Sydney, Australia; University of
                  Duhok, Cihan University-Duhok, Duhok, Kurdistan, Region-Iraq;
                  Kent Institute Australia, Sydney, Australia; Polytechnic of
                  Porto, Porto, Portugal; Australian Institute of Higher
                  Education, Sydney, Australia

SESSION 7-ONLINE: DATA SCIENCE AND DATA ANALYTICS
                  Chairs:
                  December 16, 2021 (Thursday); 08:40am - 09:40am
                  (ONLINE - ZOOM)

08:40 - 09:00am: Using Data Analytics to Forecast Violent Crime
                  Herious Cotton, Tor A. Kwembe
                  Computational Data Enabled Science and Engineering (CDS&E),
                  Jackson State University, Jackson, Mississippi, USA;
                  Department of Mathematics and Statistical Sciences, Jackson
                  State University, Jackson, Mississippi, USA

09:00 - 09:20am: Similarity Based Methods for Faulty Pattern Detection in
                  Predictive Maintenance
                  Somayeh Bakhtiari Ramezani, Logan Cummins, Brad Killen,
                  Richard Carley, Shahram Rahimi, Maria Seale
                  Computer Science and Engineering, Mississippi State University,
                  Starkville, Mississippi, USA; Institute for System Engineering
                  Research, Mississippi State University, Vicksburg,
                  Mississippi, USA; U.S. Army, Engineering Research and
                  Development Center, Vicksburg, USA

09:20 - 09:40am: Insurance Reserve Prediction: Opportunities and Challenges
                  Ayman Taha Farahat, Bernard Cosgrave, Wael Rashwan,
                  Susan McKeever
                  Technological University Dublin, Dublin, Ireland;
                  Cairo University, Egypt; DOCOsoft, Dublin, Ireland;
                  Technological University Dublin and CeADAR Technology
                  Centre for Applied AI, Dublin, Ireland

SESSION 8-ONLINE: ARTIFICIAL INTELLIGENCE, ALGORITHMS AND NOVEL APPLICATIONS
                  Chairs:
                  December 16, 2021 (Thursday); 09:40am - 11:40am
                  (ONLINE - ZOOM)

09:40 - 10:00am: A Deep Learning BERT-Based Approach to Person-Job Fit in
                  Talent Recruitment
                  Elias Abdollahnejad, Marilynn Kalman, Behrouz Far
                  Department of Electrical & Software Engineering, University
                  of Calgary, Calgary, Canada;
                  Hireground Software Solutions, Calgary, Canada

10:00 - 10:20am: Face of the Team - Diversity, Equity, and Inclusion
Tsz Hin (Martin) Cheung, Erik Noyes, Leonidas Deligiannidis
College of Computing and Data Science, Wentworth Institute
of Technology, Boston, Massachusetts, USA; Blank Center for
Entrepreneurship, Babson College, Massachusetts, USA

10:20 - 10:40am: Pairwise Learning for Imbalanced Data Classification
Shu Liu, Qiang Wu
Computational and Data Science PhD Program, Middle Tennessee
State University, Murfreesboro, Tennessee, USA;
Department of Mathematical Sciences, Middle Tennessee State
University, Murfreesboro, Tennessee, USA

10:40 - 11:00am: An Altmetric Study of Artificial Intelligence in Medicine
David Wu, Qiping Zhang
Great Neck North High School, Great Neck, New York, USA;
Palmer School of Library and Information Science,
Long Island University, Brookville, New York, USA

11:00 - 11:20am: PCA Approaches for Optimal Convolution Kernels in
Convolutional Neural Networks
Philku Lee, Deyeon Kim, Seung Heon Lee, Seongjai Kim
Center for Advanced Vehicular Systems, Mississippi State
University, Mississippi State, MS, USA; Chase Bank, USA;
Department of Biochemistry and Molecular Biology, Mississippi
State University, Mississippi State, MS, USA; Department of
Mathematics and Statistics, Mississippi State University,
Mississippi State, MS, USA

11:20 - 11:40am: Application of Data Transformation Techniques and Train-Test
Split
Amaya Shepard, Naima Naheed
Computer Science, Physics and Engineering, Benedict College,
Columbia, South Carolina, USA

SESSION 9-ONLINE: DATA SCIENCE + COMPUTATIONAL SCIENCE AND INTELLIGENCE
Chairs:
December 16, 2021 (Thursday); 11:40am - 01:20pm
(ONLINE - ZOOM)

11:40 - 12:00pm: Scratch-Style Relational Algebra and Calculus
Levi Meston, Jalal Kawash
Department of Computer Science, University of Calgary, Canada

12:00 - 12:20pm: An Experimental Evaluation of a Function in Extremal
Combinatorics
Kai Wang, Hong Zhang
Department of Computer Science, Georgia Southern University,
Statesboro, Georgia, USA; Department of Computer Science,
Georgia Southern University, Savannah, Georgia, USA

12:20 - 12:40pm: Arbitrage Behavior amongst Multiple Cryptocurrency
Exchange Markets
Samuel Grone, Weitian Tong, Hayden Wimmer, Yao Xu
Department of Computer Science, Eastern Michigan University,
Ypsilanti, Michigan, USA; Department of Computer Science,
Georgia Southern University, Statesboro, Georgia, USA;
Department of Information Technology, Georgia Southern
University, Statesboro, Georgia, USA

12:40 - 01:00pm: Abstractive Text Summarization via Stacked LSTM
                    Ireddy Siddhartha, Huixin Zhan, Victor S. Sheng*
                    Department of Computer Science, Texas Tech University,
                    Lubbock, Texas, USA

01:00 - 01:20pm: A Zero Trust Model Based Framework for Data Quality Assessment
                    Mahmood Mohammed, John R. Talburt
                    Information Science, University of Arkansas at Little Rock,
                    Little Rock, Arkansas, USA

**SESSION 10-ONLINE: COMPUTATIONAL INTELLIGENCE + COMPUTATIONAL SCIENCE +
                    DATA ANALYTICS
                    Chairs:
                    December 16, 2021 (Thursday); 01:20pm - 03:40pm
                    (ONLINE - ZOOM)**

01:20 - 01:40pm: Selecting Optimal Portfolio in Generalized Feed Forward
                    Networks and Support Vector Machines Hybrids
                    N. Loukeris*, I. Eleftheriadis, G. Gikas
                    University of West Attica, Athens, Greece; Athens
                    University of Economics and Business, Athens, Greece;
                    University of Macedonia, Thessaloniki, Greece

01:40 - 02:00pm: Sublinear Evaluation of Complex Networks for Extensive
                    Exploration of Configurations for Critical Scenarios
                    and Decision Making
                    Alexandre Delbem, Antonio Mauro Saraiva,
                    Joao Bosco A London Jr, Rodrigo Fanucchi
                    Institute of Mathemathics and Computer Science, University
                    of Sao Paulo, Sao Carlos, Brazil; Escola Politecnica,
                    University of Sao Paulo, Sao Paulo, Brazil; Sao Carlos
                    School of Engineering, University of Sao Paulo, Sao Paulo,
                    Brazil; Department of Maintenance and Distribution
                    Operation, COPEL, Curitiba, Brazil

02:00 - 02:20pm: Application of Protein Language Models to Low-N Engineering
                    of Metalloproteinase Inhibitors
                    Elham Khorasani Buxton, Rushabh Patel, Mari R. Toumaian,
                    Maryam Raeeszadeh-Sarmazdeh
                    Department of Computer Science, University of Illinois at
                    Springfield, Illinois, USA; Department of Computer and
                    Information Sciences, Temple University, Philadelphia,
                    PA, USA; Chemical and Materials Engineering Department,
                    University of Nevada, Reno, Nevada, USA

02:20 - 02:40pm: Visualizing Population Substructures Using Multidimensional
                    Scaling and Data Smoothing
                    Dimitrios Charalampidis
                    Department of Electrical and Computer Engineering,
                    University of New Orleans, New Orleans, Louisiana, USA

02:40 - 03:00pm: A New Unified Computational Method for Finding Confidence
                    Intervals of Shortest Length and/or Equal Tails under
                    Parametric Uncertainty
                    Nicholas A. Nechval*, Gundars Berzins, Konstantin N. Nechval
                    BVEF Research Institute, University of Latvia, Riga, Latvia;
                    Aviation Department, Transport and Telecommunication
                    Institute, Riga, Latvia

03:00 - 03:20pm: Player Modeling using Behavioral Signals in Competitive
Online Games
Arman Dehpanah, Muheeb Faizan Ghori, Jonathan Gemmell,
Bamshad Mobasher
School of Computing, DePaul University, Chicago, Illinois, USA

03:20 - 03:40pm: Ashurbanipal: A Diristry to Document Multimedia Metadata
Tools for Transdisciplinary Archives
Anousha Athreya, S. Koby Taswell, Andrew Kang, Ishani Das,
Carl Taswell
Brain Health Alliance, Ladera Ranch, California, USA

SESSION 11-ONLINE: HEALTH INFORMATICS AND MEDICAL SYSTEMS
                  Chairs:
                  December 16, 2021 (Thursday); 03:40pm - 04:40pm
                  (ONLINE - ZOOM)

03:40 - 04:00pm: A Review of Publicly Patient-Centered Alzheimer's
Disease Datasets
Rui Wang, Chwan-Li Shen, Victor Sheng, Heng Wu,
Zackery Toler, Samuel Temesgen
Department of Pathology, Texas Tech University Health Sciences
Center, Lubbock, Texas, USA; Department of Computer Science,
Texas Tech University, Lubbock, Texas, USA; Department of
Mathematics and Computer and Science, West Virginia State
University, Institute, West Virginia, USA

04:00 - 04:20pm: Sensor-based System to Algorithmically Recognize Gait
Disturbances Common to Vascular Dementia Onset
Arshia Khan, Janna Madden
Department of Computer Science, University of Minnesota
Duluth, Minnesota, USA

04:20 - 04:40pm: Smart Task Reminder Model for People with Mild Dementia
at Home
Dan O. Oketch, Topside E. Mathonsi
Department of Information Technology, Tshwane University
of Technology, Pretoria, South Africa

SESSION 12-ONLINE: CYBER WARFARE, CYBER DEFENSE, & CYBER SECURITY
                  Chairs:
                  December 16, 2021 (Thursday); 04:40pm - 06:40pm
                  (ONLINE - ZOOM)

04:40 - 05:00pm: On the Impact of the Embedding Process on Network Resilience
Quantification
Luiz Manella Pereira, S. S. Iyengar, M. Hadi Amini
Knight Foundation School of Computing and Information
Sciences, Florida International University, Miami,
Florida, USA; Sustainability, Optimization, and Learning
for InterDependent Networks Laboratory (solid lab),
Florida International University, Miami, Florida, USA

05:00 - 05:20pm: Zero-Trust Model of Cybersecurity: A Significant Challenge
in the Future
Fadi Al-Ayed
Department of Electrical Engineering and Computer Science,
The Catholic University of America, Washington D.C., USA

05:20 - 05:40pm: Detecting Ransomware Automated Based on Network Behavior
                   by Using Machine Learning
                   Haydar Teymourlouei, Vareva E. Harris
                   Department of Technology & Security, Bowie State University,
                   Bowie, Maryland, USA; Criminal Justice Administration and
                   Center for Cybersecurity, Benedict College, Columbia,
                   South Carolina, USA

05:40 - 06:00pm: Quantifying the Impact of Vulnerabilities of the Components
                   of an Information System Towards the Composite Rise Exposure
                   Yanzhen Qu, Adam English, Bruce Harmon
                   College of Computer Science, Engineering, and Technology,
                   Colorado Technical University, Colorado Springs, USA;
                   Ritchie School of Engineering and Computer Science,
                   University of Denver, Denver, Colorado, USA

06:00 - 06:20pm: Machine Learning for Multiple Stage Phishing URL Prediction
                   Khalid Amen, Mohamad Zohdy, Mohammed Mahmoud
                   Department of Electrical and Computer Engineering,
                   Oakland University, Rochester, Michigan, USA

06:20 - 06:40pm: Developing an API for Block-Cipher Encryption Powered by
                   Supervised Learning
                   Atif Tirmizi, Osama Abuomar, Khaled M. Alzoubi
                   Department of Engineering, Computing, and Mathematical
                   Sciences, Lewis University, Romeoville, Illinois, USA

SESSION 13-ONLINE: STEM EDUCATION, ONLINE EDUCATION, TEACHING STRATEGIES +
                   DATA CENTERS AND CLOUD COMPUTING
                   Chairs:
                   December 16, 2021 (Thursday); 06:40pm - 08:20pm
                   (ONLINE - ZOOM)

06:40 - 07:00pm: Redesigning an Undergraduate Course: Principles of
                   Programming Languages
                   Xuguang Chen
                   Computer Science Department, Saint Martin's University,
                   Lacey, Washington, USA

07:00 - 07:20pm: Designing an Extreme Based Teaching Model for the First
                   Programming Course
                   Leon Pan
                   University of the Fraser Valley, Canada

07:20 - 07:40pm: Experiences with Hundreds of Similar and Customized
                   Sites with DevOps
                   Christian Rodriguez, Geronimo Afonso, Lucas Di Cunzolo,
                   Mauricio Foster, Leandro Di Tommaso, Fernando G. Tinetti*
                   Mikroways, La Plata, Argentina; Facultad de Informmatica,
                   UNLP, CIC Prov. Bs. As., La Plata, Argentina

07:40 - 08:00pm: An Algorithm to Enhance Data Integrity in Cloud Computing
                   Moloko P. Mothlabeng, Topside E. Mathonsi, Tonderai Muchenje,
                   Deon P. Du Plessis
                   Department of information Technology, Tshwane University of
                   Technology, Pretoria, South Africa

08:00 - 08:20pm: MOBDroid2: An Improved Feature Selection Method for Detecting
Malicious Applications in a Mobile Cloud Computing Environment
Noah Oghenefego Ogwara, Krassie Petrova,
Mee Loong (Bobby) Yang
School of Engineering, Computer and Mathematical Sciences,
Auckland University of Technology, Auckland, New Zealand

SESSION 14-ONLINE: IMAGING SCIENCE, PATTERN RECOGNITION + SECURITY +
EARLY EDUCATION
Chairs:
December 16, 2021 (Thursday); 08:20pm - 10:00pm
(ONLINE - ZOOM)

08:20 - 08:40pm: Efficient 2D Keypoint-based Hand Pose Estimation
Shan-Chien Hsiao, Ching-Te Chiu
Department of Computer Science, National Tsing Hua University,
Hsinchu, Taiwan

08:40 - 09:00pm: Age-Invariant Face Recognition Methods: A Review
Kedimotse Baruni, Nthabiseng Mokoena, Murali Veeraragoo,
Ross Holder
Defense and security, Council for Scientific and Industrial
Research (CSIR), Pretoria, South Africa

09:00 - 09:20pm: Image Segmentation and Classification: Alien Plant Detection
Using MATLAB
Ibidun Christiana Obagbuwa, Kutlo Baldwin Mogorosi,
Tshepang Duncan Morapedi
Department of Computer Science and Information Technology,
Sol Plaatjie University, Kimberley, South Africa

09:20 - 09:40pm: MalDeWe: New Malware Website Detector Model based on Natural
Language Processing using Balanced Dataset
Jovana Dobreva, Aleksandra Popovska Mitrovikj, Vesna Dimitrova
Faculty of Computer Science and Engineering, Ss. Cyril and
Methodius University, Skopje, R. N. Macedonia

09:40 - 10:00pm: Usability Heuristics for Early Primary Children: A Case
Study in Sri Lanka
S.M.U.P. Samarakoon, T. A. Weerasinghe, Hakim Usoof
University of Colombo School of Computing, Colombo, Sri Lanka;
Department of Statistics and Computer Science, University of
Peradeniya, Peradeniya, Sri Lanka

DECEMBER 17, 2021
THERE ARE TWO SETS OF CONCURRENT SESSIONS ON December 17, 2021; ONE
SET OF SESSIONS (ON-SITE PRESENTATIONS) WILL BE HELD IN BALLROOMS
GALLERIA B-C AND THE OTHER SET OF SESSIONS WILL BE ONLINE (THE ZOOM
LINK IS ALREADY PROVIDED TO SPEAKERS AND ALL REGISTERED AUTHORS).

7:00am - 4:00pm: REGISTRATION
                  (LOCATION: Lotus Ballroom 1)

                  ON-SITE PRESENTATIONS & ACTIVITIES (DECEMBER 17)
                  ==

07:30 - 08-20am: CONTINENTAL BREAKFAST
                  (LOCATION: Lotus Ballroom 1)

SESSION 10-FRI: HEALTH INFORMATICS AND MEDICAL SYSTEMS
                  Chairs: TBA
                  December 17, 2021 (Friday); 08:20am - 09:00am
                  (LOCATION: Ballrooms Galleria B-C)

08:20 - 08:40am: Privacy Modelling in Contact Tracing
                  Marius Molnvik Oye
                  Department of Computer Science, Norwegian University of
                  Science and Technology (NTNU), Gjovik, Norway

08:40 - 09:00am: Modeling Clinical Practice Guidelines for Interactive
                  Decision Support Exemplified by Primary Myelofibrosis and
                  Immune Thrombocytopenia
                  Patrick Philipp, Louisa Hempel, Dirk Hempel, Jurgen Beyerer
                  Fraunhofer Institute of Optronics, System Technologies and
                  Image Exploitation IOSB, Fraunhofer Center for Machine
                  Learning, Karlsruhe, Germany;
                  Vision and Fusion Laboratory IES, Karlsruhe Institute of
                  Technology KIT, Karlsruhe, Germany;
                  Steinbeis-Transfer-Institut Klinische Hamatoonkologie,
                  Donauworth, Germany

SESSION 11-FRI: EDUCATION - STEM EDUCATION, ONLINE EDUCATION
                  Chairs: TBA
                  December 17, 2021 (Friday); 09:00am - 10:20am
                  (LOCATION: Ballrooms Galleria B-C)

09:00 - 09:20am: Authentic Assessment in a Beginning Cybersecurity Course:
                  A Pilot Study
                  Glen Sagers
                  Computer Science and Information Systems, Southern Utah
                  University, Cedar City, Utah, USA

09:20 - 09:40am: MarieSimR: The MARIE Computer Simulator Revision
                  Xuejun Liang
                  Department of Computer Science,
                  California State University - Stanislaus, California, USA

09:40 - 10:00am: Securing On-Chip Communications: An On-The-Fly Encryption
                   Architecture for SoCs
                   Amin Sarihi, Ahmad Patooghy, Mahdi Hasanzadeh,
                   Mostafa Abdelrehim, Abdel-Hameed A. Badawy
                   New Mexico State University, Las Cruces, New Mexico, USA;
                   North Carolina A&T State University, Greensboro, USA;
                   Independent Researcher, Tehran, Iran; California State
                   University, Bakersfield, California, USA

10:00 – 10:20am: Discovering Effective Learning Methods and Impact of
                   Team-based Programming Projects in Graduate Level Courses
                   Dewan Tavir Ahmed
                   Department of Computer Science, University of North Carolina at Charlotte,
                   North Carolina, USA

SESSION 12-FRI: ALGORITHMS + CYBER WARFARE, CYBER DEFENSE, & CYBER SECURITY
                   Chairs: TBA
                   December 17, 2021 (Friday); 10:20am - 12:00pm
                   (LOCATION: Ballrooms Galleria B-C)

10:20 - 10:40am: Starvation Avoidance Task Scheduling Algorithm for
                   Heterogeneous Computing Systems
                   Amjad Gawanmeh, Wathiq Mansoor, Sa'ed Abed, Darin Kablaoui,
                   Hala Al Faisal
                   Department of Electrical Engineering, College of Engineering
                   and IT, University of Dubai, Dubai, UAE;
                   College of Petroleum and Engineering, Kuwait University, Kuwait

10:40 - 11:00am: Leveraging Information Security Continuous Monitoring to
                   Enhance Cybersecurity
                   Tina AlSadhan, Joon S. Park
                   School of Information Studies, Syracuse University,
                   Syracuse, New York, USA

11:00 - 11:20am: Digital Twins for Industrial Control Systems Security
                   Guillermo Francia III, Gregory Hall
                   Center for Cybersecurity, University of West Florida,
                   Pensacola, Florida, USA

11:20 - 11:40am: Remote Video-Surveillance
                   Leonidas Deligiannidis
                   School of Computing and Data Science, Wentworth Institute of
                   Technology, Boston, Massachusetts, USA

11:40 - 12:00pm: The Need to Teach Security with Labs
                   Gary L. Wallace
                   Southern Utah University, Cedar City, Utah, USA;
                   (Retired) Commander and Director of Information Technology
                   and Security, United States Navy, USA

12:00 - 01:00pm: LUNCH (On Your Own)

SESSION 13-FRI: EDUCATION - STEM EDUCATION, ONLINE EDUCATION + SMART HOMES
                   Chairs: Dr. Amjad Gawanmeh
                          University of Dubai, Dubai, UAE
                   December 17, 2021 (Friday); 01:00pm - 03:00pm
                   (LOCATION: Ballrooms Galleria B-C)

01:00 - 01:20pm: The Mental Challenges of Emergency Remote Learning: UAE
                   Engineering Students Case Study
                   Sara Suleymanova, Amjad Gawanmeh, Wathiq Mansoor
                   College of Engineering and IT, University of Dubai, UAE

01:20 - 01:40pm: Supporting Undergraduates for Careers in Computing and
                  Engineering with Scholarships and Supervision
                  Dulal C. Kar, Scott A. King, Dugan Um
                  Texas A&M University-Corpus Christi, Texas, USA

01:40 - 02:00pm: Reason for Ethics in Technology
                  Gary L. Wallace
                  Southern Utah University, Cedar City, Utah, USA;
                  (Retired) Commander and Director of Information Technology
                  and Security, United States Navy, USA

02:00 - 02:20pm: Design of Network Forensics Labs for Teaching-oriented
                  Institutions
                  Kewei Sha, Wei Wei, Arpit Jain
                  Department of Computing Sciences, University of Houston -
                  Clear Lake, Houston, Texas, USA

02:20 - 02:40pm: Lessons and Experiences From Teaching Computing Science
                  Capstone Project Courses
                  Kewei Sha
                  Department of Computing Sciences, University of Houston -
                  Clear Lake, Houston, Texas, USA

02:40 - 03:00pm: Autonomous Cycle of Data Analysis Tasks for Scheduling the
                  Use of Controllable Load Appliances using Renewable Energy
                  Jose Aguilar, Juan Giraldo, Manuela Zapata, Andres Jaramillo,
                  Luis Zuluaga, Maria D. R-Moreno
                  Universidad de Alcala, Escuela Politecnica Superior, ISG,
                  Alcala de Henares, Spain; CEMISI, Universidad de Los Andes,
                  Merida, Venezuela; GIDITIC, Universidad EAFIT, Medellin,
                  Colombia

03:00 - 03:20pm: BREAK (Refreshments) & POSTERS
                  (LOCATION: Lotus Ballroom 1)

SESSION 14-FRI: MOBILE COMPUTING, WIRELESS NETWORKS, & SECURITY +
                  COMPUTATIONAL SCIENCE
                  Chairs: TBA
                  December 17, 2021 (Friday); 03:20pm - 05:20pm
                  (LOCATION: Ballrooms Galleria B-C)

03:20 - 03:40pm: WPA3: The Greatest Security Protocol That May Never Be
                  Glen Sagers
                  Computer Science and Information Systems, Southern Utah
                  University, Cedar City, Utah, USA

03:40 - 04:00pm: Optimized Edge, Fog and Cloud Computing Method for Mobile
                  Ad-hoc Networks
                  Josip Balen, Davor Damjanovic, Petar Maric, Kresimir Vdovjak
                  Faculty of Electrical Engineering, Computer Science and
                  Information Technology Osijek, Josip Juraj Strossmayer
                  University of Osijek, Croatia

04:00 - 04:20pm: An ML Based Anomaly Detection System in Real-Time Data Streams
                  Javier Jose Diaz Rivera, Talha Ahmed Khan, Waleed Akbar,
                  Muhammad Afaq, Wang-Cheol Song
                  Department of Electronic Engineering, Jeju National University,
                  Jeju, Republic of Korea;
                  Department of Computer Engineering, Jeju National University,
                  Jeju, Republic of Korea

04:20 - 04:40pm: A High-Performance 5G/6G Infrastructure for Augmented,
                   Virtual, and Extended Reality
                   Jeffrey Wallace, Angelica Valdivia
                   Rocket Technology Systems, LLC, Washington, DC, USA

04:40 - 05:00pm: Effectiveness of Privacy Techniques in Smart Metering Systems
                   Martin Peralta-Peterson, Olivera Kotevska
                   Electrical and Computer Engineering Department, University
                   of California - San Diego, California, USA;
                   Computer Science and Mathematics Division,
                   Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

05:00 - 05:20pm: Non-Orthogonal HOSVD Applied to 3-D Image Compression
                   Ionela S. Munayco, Marina Chugunova, Ali Nadim
                   Institute of Mathematical Sciences, Claremont Graduate
                   University, Claremont, California, USA

05:20 - 05:40pm: CLOSING REMARKS

ONLINE PRESENTATIONS (DECEMBER 17 - Friday)
===
The online presentations are scheduled from 07:00am
till 10:00pm daily - this is to serve online speakers,
online attendees, and participants who are residing in
different time zones. The conference has also granted the
request from the administrations of 12 institutions to
live stream the online sessions for their classrooms
(one connection per classroom / institution).
IMPORTANT NOTE: as a professional courtesy we expect
conference speakers to participate in other speakers'
presentations - also, the moderators may have to shift
presentations in cases where there are speaker no-shows.

SESSION 15-ONLINE: COMPUTATIONAL SCIENCE: DATA CENTERS, CLOUD COMPUTING +
**   EDUCATION + IMAGING SCIENCE + SMART CITY AND APPLICATIONS**
**   Chairs:**
**   December 17, 2021 (Friday); 07:00am - 10:00am**
**   (ONLINE - ZOOM)**

07:00 - 07:20am: Utilizing HAPS Deployed Data Centers in Offloading
                   Cloud Workloads
                   Tolga Ovatman, Muhammed Enes Tirnakci, Ahmet Yilmaz
                   Department of Computer Engineering, Istanbul Technical
                   University, Istanbul, Turkey

07:20 - 07:40am: Learning Finance with Games: An Empirical Study
                   Sandy Ingram, Rania Islambouli,
                   Miharisoa Hanitrarivony Andrianantenaina,
                   Jean-Philippe Weisskopf, Philippe Masset, Nicole Baudat
                   HES-SO, HEIA-FR, Fribourg, Switzerland; EPFL (The Ecole
                   Polytechnique Federale de Lausanne), Lausanne, Switzerland;
                   HES-SO, EHL, Lausanne, Switzerland; HES-SO, Source School,
                   Lausanne, Switzerland

07:40 - 08:00am: Student Hackathons for Low Cost Digital Solutions
German Terrazas, Gregory Hawkridge, Duncan McFarlane, and Mike McNally
Institute for Manufacturing, University of Cambridge, UK; Institute for Advanced Manufacturing, University of Nottingham, UK

08:00 - 08:20am: Automatic Classification of Coronary Stenosis using Feature Selection and Boltzmann-Univariate Marginal Distribution Algorithm
Miguel A. Gil-Rios, Igor Guryev, Juan M. Lopez-Hernandez, and Ivan Cruz-Aceves
Sciences and Engineering Division, Universidad de Guanajuato, Salamanca, Mexico; CONACYT - CIMAT, Centro de Investigacion en Matematicas, A.C., Guanajuato, Mexico

08:20 - 08:40am: Optimal Bilateral Filtering of CT Images
Ivo Draganov, Veska Gancheva
Radiocommunications and Videotechnologies Department, Technical University of Sofia, Sofia, Bulgaria; Programming and Computer Technologies Department, Technical University of Sofia, Sofia, Bulgaria

08:40 - 09:00am: A Lightweight Ontology for Real Time Semantic Correlation of Situation Awareness Data Generated for First Responders
Iosif Angelidis, Elena Politi, George Vafeiadis, Danai Vergeti, Dimitris Ntalaperas, Nikos Papageorgopoulos
UBITECH, Athens, Greece

09:00 - 09:20am: On Cognitive Management and Non-Causal Reasoning for Enabling Highly Automated Driving
Ilias E. Panagiotopoulos, Konstantina Karathanasopoulou, George J. Dimitrakopoulos
Department of Informatics and Telematics, Harokopio University of Athens, Greece

09:20 - 09:40am: Risk Assessment in the Context of Dynamic Reconfiguration of Level of Driving Automation in Highly Automated Vehicles
Ilias E. Panagiotopoulos, Konstantina N. Karathanasopoulou, George J. Dimitrakopoulos
Department of Informatics and Telematics, Harokopio University of Athens, Greece

09:40 - 10:00am: Optimal Operation of a Microgrid for Energy-aware Buildings by Decision-based Algorithm
Teodora Mindra, Gheorghe Florea, Oana Chenaru, Radu Dobrescu, Lucian Toma
Societatea Inginerie Sisteme, Bucharest, Romania; Faculty of Automatic Control and Computers, University Politehnica of Bucharest, Romania; Faculty of Power Engineering, University Politehnica of Bucharest, Romania

SESSION 16-ONLINE: SOFTWARE ENGINEERING + IoT + MOBILE COMPUTING + PARALLEL AND DISTRIBUTED PROCESSING + SECURITY + Computational Intelligence
Chairs:
December 17, 2021 (Friday); 10:00am - 01:00pm
(ONLINE - ZOOM)

10:00 - 10:20am: Simulating Realistic IoT Network Traffic Using
                   Similarity-based DSE
                   Peter Brand, Joachim Falk, Tanja Maier, Jurgen Teich
                   Friedrich-Alexander-Universitat Erlangen-Nurnberg, Germany

10:20 - 10:40am: ACLSGO: Ant Colony Link State Aware Geographic Opportunistic
                   Routing Protocol for VANET
                   Fatima Belamri, Samra Boulefekhar, Djamil Aissani
                   Research Unit "LaMOS Modeling and Optimization of Systems",
                   Bejaia University Targa Ouzemmour, Algeria

10:40 - 11:00am: Hybridizing Teaching-Learning Based Optimization with GA and PSO:
                   Case Study of Supply Chain Network Model
                   Mitsuo Gen, Chuluunsukh Anudari, YoungSu Yun
                   Fuzzy Logic Systems Institute and Tokyo University of Science, Japan;
                   International Cooperation Team, Chosun University, Gwangju, Korea;
                   School of Business Administration, Chosun University, Gwangju, Korea

11:00 - 11:20am: Virtual Basketball Training Platform
                   Tyson Howard, Zizhong J. Wang
                   Virginia Wesleyan University, Virginia Beach, Virginia, USA

11:20 - 11:40am: Parallel Multithreaded Medical Images Filtering
                   Veska Gancheva
                   Department of Programming and Computer Technologies,
                   Technical University of Sofia, Sofia, Bulgaria

11:40 - 12:00pm: Cryptocurrency Bounced Back Based on Cryptography Technology
                   during the COVID-19 Pandemic
                   Fatma Mallouli, Nesrine Khalifi, Aya Hllal, Eman Ferjani,
                   Imen Gmach, Nada Chaabane, Rimah Amami, Rim Amami
                   Deanship of Preparatory Year and Supporting Studies, Imam
                   Abdulrahman Bin Faisal University, Dammam, Saudi Arabia;
                   Business Administration Department, The Applied College,
                   Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia;
                   Computer Science Department, The Applied College, Imam
                   Abdulrahman Bin Faisal University, Dammam, Saudi Arabia

12:00 - 12:20pm: Hybrid Meta-heuristics Approach for Solving Supply Chain Network
                   Model under Disruption Risk
                   Chuluunsukh Anudari, YoungSu Yun, Mitsuo Gen
                   International Cooperation Team, Chosun University, Gwangju, Korea;
                   School of Business Administration, Chosun University, Gwangju,
                   Korea; Fuzzy Logic Systems Institute and Tokyo University of
                   Science, Japan

12:20 - 12:40pm: Distributed Network Optimization for Secure Operation of
                   Interdependent Complex Networks
                   M. Hadi Amini, Laurent L. Njilla, Ahmed Imteaj, Calvin Mark
                   Knight Foundation School of Computing & Information Sciences,
                   Florida International University, Miami, Florida, USA;
                   USA Air Force Research Lab, USA

12:40 - 01:00pm: Developing Cybersecurity Workforce: Introducing Cybersec
                   Labs for Industry Standard Cybersecurity Training
                   Yasin Kose, Murat Ozer, Mehmet Bastug, Said Varlioglu,
                   Oguzhan Basibuyuk, Hari Priya Ponnakanti
                   Friedrich-Alexander-Universitat Erlangen-Nurnberg,
                   Erlangen, Germany; School of Information Technology,
                   University of Cincinnati, Cincinnati, Ohio, USA; Cybercrime
                   and Homeland Security, University of Scranton, Scranton,
                   PA, USA; Homeland Security and Criminal Justice,
                   Sul Ross State University, Alpine, Texas, USA

**SESSION 17-ONLINE: STEM EDUCATION + CYBERSECURITY + COMPUTATIONAL SCIENCE
                   AND COMPUTATIONAL INTELLIGENCE
                   Chairs:
                   December 17, 2021 (Friday); 01:00pm - 04:00pm
                   (ONLINE - ZOOM)**

01:00 - 01:20pm: Undergraduate In-class Research Experience for Computer
                   Architecture Students
                   Muhittin Yilmaz
                   Electrical Engineering and Computer Science Department,
                   Texas A&M University-Kingsville, Kingsville, Texas, USA

01:20 - 01:40pm: Measuring the Effectiveness of Security Treatments on Threats
                   through a Security ROI Model
                   Toby Houchens, Yanzhen Qu
                   School of Computer Science, Colorado Technical University,
                   Colorado Springs, Colorado, USA

01:40 - 02:00pm: Assessing Cognitive Load for Junior Software Engineers:
                   A Mixed-Method Study
                   Mark Allison, Stephen Turner, Molly Kwansy
                   The University of Michigan - Flint, Michigan, USA

02:00 - 02:20pm: Towards Two-Dimensional Game Theory Based Predictive Analytics
                   Mirhossein Mousavi Karimi, Shahram Rahimi
                   Department of Computer Science and Engineering, Mississippi
                   State University, Mississippi, USA

02:20 - 02:40pm: Designing Diversity, Service, and Active Learning for the
                   Common Good in an Undergraduate Computer Science Course
                   Arshia Khan, Kathryn Milun
                   Department of Computer Science, Swenson College of Science
                   and Engineering, University of Minnesota Duluth (UMD),
                   Duluth, Minnesota, USA; College of Liberal Arts, University
                   of Minnesota Duluth (UMD), Duluth, Minnesota, USA

02:40 - 03:00pm: FREE SLOT

03:00 - 03:20pm: Evaluation of Distance Learning and Students' Achievement
                   in Saudi Higher Education Institutions (HEIs)
                   Fahd H. Almutari, Sung-Chul Hong
                   Department of Computer and Information Sciences,
                   Towson University, Towson, Maryland, USA

03:20 - 03:40pm: A Strategy to Assess Computational Thinking
Antonio Gonzalez-Torres, Lilliana Sancho-Chavarria,
Magaly Zuniga-Cespedes, Jorge Monge-Fallas, Jose Navas-Su
Computer Engineering Department, Costa Rica Institute of
Technology, Cartago, Costa Rica;   Computing School,
Costa Rica Institute of Technology, Cartago, Costa Rica;
Omar Dengo Foundation, San Jose, Costa Rica;   Mathematics
School, Costa Rica Institute of Technology, Costa Rica

03:40 - 04:00pm: On the Selection of Hyperparameters in Convolutional
Neural Networks
Donglin Wang, Qiang Wu
Department of Mathematical Sciences, Middle Tennessee State
University, Murfreesboro, Tennessee, USA

**SESSION 18-ONLINE: SOFTWARE ENGINEERING + ARTIFICIAL INTELLIGENCE +
IMAGING SCIENCE AND NOVEL APPLICATIONS
Chairs:
December 17, 2021 (Friday); 04:00pm - 08:20pm
(ONLINE - ZOOM)**

04:00 - 04:20pm: Determining Performance of Computer Vision Models using
Generalizability, Robustness and Elasticity Score
Aishwarye Omer, Hien Nguyen
Mathematics and Computer Science Department, Pennsylvania
State University, Harrisburg, Pennsylvania, USA

04:20 - 04:40pm: Artificial Intelligence in Support of Welfare Monitoring
of Dairy Cattle: A Systematic Literature Review
Lucas Mendes Lima, Victor Calebe Cavalcante,
Mariana Guimaraes de Sousa, Claudio Afonso Fleury,
Diogo Oliveira, Eduardo Noronha de Andrade Freitas
Federal Institute of Goias, IFG, Goiania-GO, Brazil;
Florida State University, FSU, Florida, USA

04:40 - 05:00pm: Mimic: A Remote Webcam Device Over WebRTC
Logan Crandall, Mason Roberts, En Cheng*
Department of Computer Science, The University of Akron,
Akron, Ohio, USA

05:00 - 05:20pm: Real Time Issues of Validation and Verification in
Software Development Cycle
Evan Yousif, Dafer Alali, Mohammed Mahmoud, Mohamed Zohdy
Department of Computer Science and Informatics,
Oakland University, Michigan, USA;   Department Computer &
Electrical Engineering, Oakland University, Michigan, USA

05:20 - 05:40pm: Regression Testing of Mobile Apps
Zeinab Abdalla, Anneliese Andrews, Ahmed Alhaddad
Department of Computer Science, University of Denver,
Denver, Colorado, USA

05:40 - 06:00pm: Automatic Test Cases Generation for C Written Programs
Using Model Checking
Daniset Gonzalez Lima, Raul E. Gonzalez, Pedro Mejia Alvarez
Computer Science, CINVESTAV unidad Guadalajara, Mexico

06:00 - 06:20pm: New Method for the Computation of Generating Functions
                    with Applications
                    Jun Zhang, Ruzong Fan, Fangyang Shen
                    Department of Computer Science and Engineering Technology,
                    University of Maryland Eastern Shore, Princess Anne,
                    Maryland, USA; Department of Biostatistics, Bioinformatics,
                    and Biomathematics, Georgetown University, Washington, DC, USA;
                    Department of Computer Systems Technology, New York City
                    College of Technology, City University of New York,
                    Brooklyn, New York, USA

06:20 - 06:40pm: Reinforcement Learning - Based Control Systems for Networked
                    Power Infrastructures
                    Namrata Saha, Shabnam Rezapour, M. Hadi Amini
                    Knight Foundation School of Computing and Information
                    Sciences, Florida International University, Miami,
                    Florida, USA; Enterprise and Logistics Engineering,
                    Knight Foundation School of Computing and Information
                    Sciences, Florida International University, Miami, Florida, USA

06:40 - 07:00pm: Face Recognition Using MATLAB
                    Ibidun Christiana Obagbuwa*, Stefany Bam, Dineo Tiffany Moroka
                    Department of Computer Science and Information Technology,
                    Sol Plaatie University, Kimberley, South Africa

07:00 - 07:20pm: DCLPP: A Distributed and Cooperative Approach based on a
                    Local Path Planning for Multi-sensors Patrolling - Application
                    to Rapid Bushfire Detection
                    Elie Tagne Fute, Doris-Kholer Nyabeye Pangop, Emmanuel Tonye
                    Department of Computer Science, University of Dschang, Cameroon;
                    Department of Computer Engineering, University of Buea,
                    Cameroon; Department of Electrical and Electronics Engineering,
                    University of Yaounde I, Cameroon

07:20 - 07:40pm: Preservation of Manual Changes and Provenance for Data Quality
                    using the Nano Version Control Repo
                    Lukasz Machowski, Tshilidzi Marwala
                    Synthesis Software Technologies, Johannesburg, South Africa;
                    Department of Electrical and Electronic Engineering Science,
                    University of Johannesburg, Johannesburg, South Africa

07:40 - 08:00pm: Nano Version Control and "Robots of Robots" - Data Driven,
                    Regenerative Production Code
                    Lukasz Machowski, Tshilidzi Marwala
                    Synthesis Software Technologies, Johannesburg, South Africa;
                    Department of Electrical and Electronic Engineering Science,
                    University of Johannesburg, Johannesburg, South Africa

08:00 - 08:20pm: Solving the Dose Distribution Problem in the Radiotherapy
                    Planning Applying the Interior Point Methods
                    Jackeline del Carmen Huaccha Neyra,
                    Aurelio Ribeiro Leite de Oliveira
                    Department of Applied Mathematics, University of Campinas,
                    Campinas, Brazil

08:20 - 08:40pm: FREE SLOT / TBA
08:40 - 09:00pm: FREE SLOT / TBA
09:00 - 09:20pm: FREE SLOT / TBA
09:20 - 09:40pm: FREE SLOT / TBA
09:40 - 10:00pm: FREE SLOT / TBA

THIS IS LIST IS ONLY A VERY SMALL SUBSET OF THE PAPERS (whose authors had indicated that they will be providing their Video Presentations.)

PRE-RECORDED PRESENTATIONS - AUTHORS OF THE FOLLOWING PAPERS CAN (IF THEY WISH) PROVIDE THE LINKS TO THEIR PRESENTATIONS. THE LINKS TO THESE PRESENTATIONS WOULD THEN BE COMPILED AND BE MADE AVAILABLE IN THE ONLINE VERSION OF THE "BOOK OF ABSTRACTS" (AFTER THE CONFERENCE). THE BOOK OF ABSTRACTS WILL BE AVAILABLE ON THE CSCI 2021 WEB SITE.

CSCI-ISNA: SOCIAL NETWORK ANALYSIS, SOCIAL MEDIA, & MINING

A Sentiment Analysis Approach for Abusive Content Detection using Improved Dataset
Aziz L. Ngou Njikam Abdou, Kun Zhang, Elie Fute Tagne
Nanjing University of Science and Technology, Nanjing, China;
Faculty of Engineeering and Technology, University of Buea, Cameroon

Living, Loving and Learning Online: Raising Awareness of the New Normal and its Security Considerations
Portia Buthelezi
Computer Science Department, University of South Africa, Florida, South Africa

CSCI-ISBD: BIG DATA AND DATA SCIENCE

Predictive Analytics Approach based on Grey-Markov for Digital Economy
Guang Hu, Yue Tang
School of Computer Science, Fudan University, China;
School of Statistics and Information, Shanghai University of International Business and Economics, Shanghai Key Laboratory of Data Science, Shanghai, China

CSCI-ISAI: ARTIFICIAL INTELLIGENCE

Data Driven Process Evaluation Simulation Model for Circular Economy Treatment Processes
Dominique Fabio Briechle, Sebastian Lawrenz
Center for Digital Technologies, Clausthal University of Technology, Goslar, Germany

The Effects of Different Parameters on the Accuracy of Deep Learning Models for Predicting U.S. Citizen's Life Expectancy
Michelle Hu, Yen-Hung (Frank) Hu
Woodside High School, Newport News, Virginia, USA;
Department of Computer Science, Norfolk State University, Norfolk, Virginia, USA

ConvGRU-TSNet: A Novel Deep Learning Approach for Multivariate Time Series Forecasting
Jingke She, Shanshan Gong, Suyuan Yang, Tianzi Shi, Shaofei Lu, Heng Wu
College of Computer Science and Electronic Engineering, Hunan University, Changsha, China; Department of Mathematics and Computer Science, West Virginia State University, Morgantown, West Virginia, USA

Attitudes Toward Corona Vaccine and Intention Among University Students
Sanaa Abujilban, Lina Mrayan, Shaher Hamaideh, Dheaya Alrousan,
Hashim Abu-Gellban
Hashemite University, Jordan; Texas Tech University, Lubbock, USA

Enhancing the Resolution of Satellite Imagery using a Generative Model
Mahee Tayba, Pablo Rivas
Department of Computer Science, Baylor University, Texas, USA

Human Activity Classification Using Basic Machine Learning Models
Bikram Khanal, Pablo Rivas, Javier Orduz
Department of Computer Science, Baylor University, Texas, USA

Quantifying the Right Combination of Knowledge and Population
Diversity for Transferred Populations
Tami Alghamdi, Robert B. Heckendorn, Terence Soule
Department of Computer Science, University of Idaho, Moscow, Idaho, USA

Weakly Supervised Crowdsourcing Learning Based on Adversarial Consensus
Meng-Long Wei, Shao-Yuan Li, Sheng-Jun Huang
Ministry of Industry and Information Technology Key Laboratory of
Pattern Analysis and Machine, Intelligence College of Computer
Science and Technology, Nanjing University of Aeronautics and
Astronautics, Nanjing, China

Evaluating Accuracy and Adversarial Robustness of Quanvolutional
Neural Networks
Korn Sooksatra, Pablo Rivas, Javier Orduz
School of Engineering and Computer Science, Department of Computer
Science, Baylor University, Texas, USA

Cyberbullying Detection Neural Networks using Sentiment Analysis
Jalal Omer Atoum
Department of Computer Science, University of Texas at Dallas, Texas, USA

Sequential Recommendation for Online Consumption by ACFNN
Yahong Lian*, Jing Yun, Xiaoming Su, Zhiwei Xu
Institute of Data Science and Application, Inner Mongolia University
of Technology, Hohhot, China

CSCI-ISHI: HEALTH INFORMATICS AND MEDICAL SYSTEMS

Applied Blockchain Technology in Saudi Arabia Electronic Health Records
Ashwag Maghraby, Asmaa Numan, Arwa Al Mashi, Asrar Aljuhani,
Razan Almehdar, Nada Abdu
Department of Computer Science, Umm Al-Qura University, Saudi Arabia

Data Provenance Management and Application in Clinical Data Spaces
Xiaoyuan Bao, Jingsi Jiang, Kai Zhang
Medical Informatics Center, Peking University Health Science Center,
Beijing, China; Basic Medical Sciences, Peking University Health
Science Center, Beijing, China; Peking University People's Hospital,
Peking University Health Science Center, Beijing, China

Machine Learning and Big Data Based Clinical EBM Evidence Acquisition
and Evaluation
Meng Jin, Jingsi Jiang, Kai Zhang, Xiaoyuan Bao
Medical Informatics Center, Peking University Health Science Center,
Beijing, China; Basic Medical Sciences, Peking University Health
Science Center, Beijing, China; Peking University People's Hospital,
Peking University Health Science Center, Beijing, China

Neural Net Analysis of Peak-Calling Errors in Cut&Tag Data
Micah Lessnick, Holger Mauch
Computer Science, Natural Sciences Collegium, Eckerd College,
St. Petersburg, Florida, USA

Middleware to Integrate Patient Data from Heterogeneous Distributed
Databases and its Efficacy
Subrata Kumar Das, Mohammad Zahidur Rahman
Department of Computer Science and Engineering, Jahangirnagar
University, Dhaka, Bangladesh

Development of a Causal Model to Study the Disparate Effects of
COVID-19 on Minorities
Misagh Faezipour, Miad Faezipour, Brianna Bauman
Department of Engineering Technology, Middle Tennessee State
University, Tennessee, USA; School of Engineering Technology,
Electrical & Computer Engineering Technology, Purdue University,
West Lafayette, Indiana, USA; Department of Engineering Technology,
Middle Tennessee State University, Tennessee, USA

Iterative Ensemble Transductive Learning for Microscopy Image Analysis
Tian Shi, Longshi Wu, Changhong Zhong, Ruixuan Wang, Hongmei Liu
Sun Yat-sen University, Guangzhou, China; GuangDong Province Key
Laboratory of Information Security Technology, Guangzhou, China

A Novel Event-Related Desynchonization/Synchronization with Gamma
Peak EEG Model for Motor State Identification
Ravi Suppiah, Anurag Sharma, Noori Kim, Khalid Abidi
Electrical and Electronic Engineering, Newcastle University in
Singapore

Motor State Classification based on Electromyography (EMG) Signals
using Wavelet Entropy and Neural Networks
Ravi Suppiah, Khalid Abidi, Noori Kim, Anurag Sharma
Electrical and Electronic Engineering, Newcastle University in
Singapore

Toward Intelligent Respite-Care Dyad Monitoring Using IoT
Shakour Abuzneid, Miad Faezipour
Department of Computer Science, St. Cloud State University, St. Cloud,
MN, USA; School of Engineering Technology, Electrical & Computer
Engineering Technology, Purdue University, West Lafayette, Indiana, USA

Estimating the Trend of COVID-19 in Iran Before and After the Start
of Vaccination
Alireza Safarzadeh, Mohammad Javad Heidarian, Reza Sharifanfar,
Mohammad Reza Jamali, Sina Forqandoost Haqiqi
School of Electrical and Computer Engineering, University of Tehran,
Tehran, Iran; Pulseware Co., Tehran, Iran; Lanvera LTD., Frisco,
Texas, USA

An Early Warning System for Patients in Emergency Department based
on Machine Learning
Ying-Feng Hsu
Osaka University, Japan

CSCI-ISCW: CYBER WARFARE, CYBER DEFENSE, & CYBER SECURITY

A New SOCMINT Framework for Threat Intelligence Identification
Marco San Biagio, Roberto Acquaviva, Valentina Mazzonello,
Ernesto La Mattina, Vito Morreale
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A Safe Dynamic Access Control Providing Mandatory Automotive
Cybersecurity
Vincent Hugot, Adrien Jousse, Christian Toinard, Benjamin Venelle
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The H2020 ANITA Platform: Generating Knowledge about Crime through
User-centred Innovative Tools
Valentina Mazzonello, Ernesto La Mattina, Roberto Acquaviva,
Gianluca Cina, Marialuna De Tommaso, Youssef Bouali, Barbara Pirillo,
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Adversarial of Defense Systems Against Spoofing Face Recognition Attacks
Ashokkumar Patel, Riley Kiefer
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Lakeland, Florida, USA

Analysis of the Information Security of Public Organizations in Ecuador
Richard Romero Izurieta, Luis Jhony Caucha Morales,
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Jose Antonio Orizaga Trejo
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Department of Information System (CUCEA), University of Guadalajara,
Guadalajara, Mexico;   School of Mathematical Computational, Sciences
and Information Technology, Yachay Tech University, Ecuador

Sprofiler: Automatic Generating System of Container-Native System
Call Filtering Rules for Attack Surface Reduction
Takashi Iiguni, Hitoshi Kamei, Keizo Saisho
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A Study of the Landscape of Security Issues, Vulnerabilities, and
Defense Mechanisms in Web Based Applications
Nick Rahimi
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of Southern Mississippi, Hattiesburg, Mississippi, USA

Data Deletion and Recovery of Android Platforms
Hyungchan Kim, Yeonghun Shin, Sungbum Kim, Wooyeon Jo, Minju Kim,
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Platform Tech Team, WINS Co., Ltd, Seongnam, Republic of Korea;
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Security Analysis of Smart Watch and Band Devices
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CSCI-ISED: EDUCATION - STEM EDUCATION, ONLINE EDUCATION, ABET, ...

Evaluation Strategies at University for Students with Dyslexia: a pilot
study supported by face emotion recognition
Maura Mengoni, Silvia Ceccacci, Noemi Del Bianco, Ilaria D'Angelo,
Simone Aperecida Capellini, Catia Giaconi
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Agile Transformation for Capstone Projects: Preparing Graduates for
the Job Market
Maha Al-Yahya, Rana Alkadi, Hend Alrasheed
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Evaluation of Web-based Digital Storytelling Tools for Early
Childhood Education
Marianthi Manousi, Jim Prentzas
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A Real-Time Translation of Arabic Video Contents to Arabic Sign Language
Ashwag Maghraby, Safaa Qutub, Afraa Alandijani, Huda Alandijani,
Linah Bakhsh, Nuha Alharbi
Department of Computer Science and Informatics, Umm Al-Qura
University (UQU), Mecca, Saudi Arabia

Computer Science Theory from a Practical Point of View
Peter M. Maurer
Department of Computer Science, Baylor University, Waco, Texas, USA

The Use of Augmented Reality to Promote Learning in Science Laboratories
Francielli Freitas Moro, Maria Paula Correa Angeloni,
Liane Margarida Rockenbach Tarouco, Joao Bosco da Mota Alves
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University of Rio Grande do Sul, Porto Alegre, Brazil; Programa de
Pos-Graduacao em Tecnologias da Informacao e Comunicacao, Federal
University of Santa Catarina, Ararangua, Brazil

Challenges of Incorporating a Mobile Device Forensics Summer Camp
with Critical Thinking Amongst K-12 Students
Frances C. Dancer, April L. Tanner, Mary M. Thomas
Department of Electrical and Computer Engineering & Computer Science,
Jackson State University, Jackson, MS, USA

A Remote Instructional Approach with Interactive and Collaborative
Learning to Teach an Introductory Programming Course during
COVID-19 Pandemic
Mahmudur Rahman, Roshan Paudel
Morgan State University, Baltimore, Maryland, USA

Undergraduate Research Experiences: A Case Study from the Computer
Science Department, University Of Guyana
Penelope DeFreitas
Department of Computer Science, University of Guyana, Georgetown, Guyana

Posters about Women Pioneers in Computer Science to Break the
Gender Gap: A Preliminary Method
Lina Garcia-Cabrera, Irene Pedrosa-Garcia, Jose-Maria Serrano
Department of Computer Science, EPS, University of Jaen, Jaen, Spain;
Auringis High School, Junta de Andalucia, Jaen, Spain

Application of Consumptive Metrics to Measure Internship Alignment
Mathew Nicho, Emad Batineh, Tarannum Parkar
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The Transformation Process from In-campus Classes into Online Classes
due to COVID-19 Pandemic Situation - The Case of Higher Education
Institutions in Kosovo
Erza Baftiu, Krenare Pireva Nuci
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Institution, Prishtina, Kosovo

Statistical Study and Intelligent Classroom Proposal Adapted to
Students with Speech and Hearing Disabilities
Asmaa El Mahmoudi, Habiba Chaoui, Nour El Houda Chaoui
Advanced Systems Engineering Laboratory, National School of Applied
Sciences, Ibn Tofail University, Kenitra, Morocco;
National School of Applied Sciences, Sidi Mohamed Ben Adbedllah
University, Fes, Morocco

Teaching Undergraduate Software Engineering: Xamarin Mobile App
Development During the Covid-19 Pandemic
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A Blended Learning Approach Supporting the Improvement of Primary
School Students' Performance
Stavros Tsetsos, Jim Prentzas
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Estimation of Problematic Portions in Presentation Slides Based
on Analysis of Audience's Unconscious Reactions and Slide Data
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Center, Waseda University, Tokyo, Japan; Faculty of Education,
Tokyo Gakugei University, Tokyo, Japan

Impact of Covid-19 Pandemic on Higher Education
George Feuerlicht, Marek Beranek, Vladimir Kovar
Unicorn University, Prague, Czech Republic

Hyperparameter Optimization and Comparison of Student Performance
Prediction Algorithms
Ibrahim A. Alharbi, Ali Jaber Almalki, Cliff C. Zou
Department of Computer Science, University of Central Florida,
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Estimation of Problematic Portions in Presentation Slides Based
on Analysis of Audience's Unconscious Reactions and Slide Data
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CSCI-ISOT: INTERNET OF THINGS & INTERNET OF EVERYTHING

IoT-based Monitoring System to Prevent Collapse of Falsework Systems
During Construction
R.C.Y. Lam, L.C.H. Lam, N.X. Li, P.K.K. Lee
Department of Civil Engineering, President's Office,
Chu Hai College of Higher Education, Hong Kong, China

UV-C VentGuard: An IoT-based Monitoring and Disinfection System for
Pathogen Inactivation in Ventilation Pipes of High-rise Buildings
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Identifying Actionable Customer Behavior through Advanced Analysis
of Bank Transaction Data
Anna Nesvijevskaia, Vincent Martenot, Paul Fogel, Jean-Daniel Zucker
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DataLab, Quinten, Paris, France; DataLab Senior Advisor, Quinten,
Paris, France; IRD, UMMISCO, Sorbonne University, Bondy, France

A Token Label for Maturity Prediction using Current-Future Changing Rate
Alisdair Chun On Lee, Shum Paul Kwok-Ching, H. Anthony Chan
Computing and Information Sciences, Caritas Institute of Higher
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Weather Information Acquisition System using Small Wireless Microcomputers
and Environmental Sensors for Agricultural Workers
Uyou Cyou, Shohei Yokoyama, Shingo Otsuka
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CSCI-ISPC: SIGNAL & IMAGE PROCESSING, COMPUTER VISION & PATTERN RECOGNITION

Gain and DC Offset Mismatch Correction in TI-ADC System Using
Adaptive Filter
Muktiben Mehta, Sung-won Park
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Texas A&M University-Kingsville, Kingsville, Texas, USA

A Review Paper on Facial Recognition Techniques in E-business
Tiyani Christopher Hlongwane, Topside E. Mathonsi, Deon Du Plessis,
Tonderai Muchenje
Department of Information Technology, Tshwane University of
Technology, Pretoria, South Africa

Multimodal Medical Image Fusion Based on Hybrid Bilateral Filter and
Contrast Adjustment Model
Yingmei Zhang, Hyo Jong Lee
Department of Computer Science and Engineering, Jeonbuk National
University, Jeonju, Korea

Speeding-Up the Particle Filter Algorithm for Tracking Multiple
Targets Using CUDA Programming
Jinhua Zhang, Wenkai Guan, Cristinel Ababei, Henry Medeiros,
Richard J. Povinelli
Department of Electrical and Computer Engineering, Marquette
University, Milwaukee, WI, USA

Combining Techonologies for Aiding Search Missions with Drones
Fernando G. Tinetti, Oscar C. Valderrama Riveros
III-LIDI, Fac. de Informatica, UNLP - CIC Provincia de Bs. As,
La Plata, Argentina; III-LIDI, Fac. de Informatica, UNLP - Universidad
Cooperativa de Colombia, Ibague, Colombia

Partial Attention CenterNet for Bottom-Up Human Pose Estimation
Jiahua Wu, Hyo Jong Lee
Division of Computer Science and Engineering, Jeonbuk National
University, Jeonju-si, Republic of Korea

Low-Resolution Face Recognition on Multi-Person Indoor Environment
Using Convolutional Neural Network
Greg C. Lee, Yu Che Lee, Cheng-Chieh Chiang
Department of Computer Science and Information Engineering,
National Taiwan Normal University, Taipei, Taiwan; Department of
Information Technology, Takming University of Science and
Technology, Taipei, Taiwan

A Discussion of Optimization about Stereo Image Depth Estimation
Based on Multi-baseline Trinocular Camera Model
Hanrong Wang, Ming Li, Jie Wang, Yang Li, Sidan Du
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Nanjing University, Nanjing, China

Fusion of Visual and Textual Features for Table Header Detection
in Handwritten Text Images
Addisson Salazar*, Jose Ramon Prieto, Enrique Vidal,
Gonzalo Safont, Luis Vergara
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Pattern Recognition and Human Language Technology, PRHLT,
Universitat Politecnica de Valencia, Valencia, Spain

Metricam: Fast and Reliable Social Distancing Analysis in Online
Security Cameras
Bruno Padilha, Pedro Losco Takecian, Decio Lauro Soares,
Andre Luis Schwerz, Leonardo Tadashi Kamaura, Joao Eduardo Ferreira
Department of Computer Science, University of Sao Paulo,
Sao Paulo, Brazil; Department of Computing, Federal University of
Technology (UTFPR), Campo Mourao, Paran, Brazil

Simultaneous Analysis of fMRI and EEG Biosignals: a Multimodal
Fusion Approach
Luis Manuel Pereira, Addisson Salazar, Luis Vergara
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Improving classification of Composite Materials Measured by
Ultrasounds using Classifier Combination
Addisson Salazar, Alberto Rodriguez, Luis Vergara
Institute of Telecommunications and Multimedia Applications,
Universitat Politecnica de Valencia, Valencia, Spain;
Universidad Miguel Hernandez de Elche, Departamento de Ingenieria
de Comunicaciones, Elche, Spain

Late Fusion for Improving Intrusion Detection in a Network
Traffic dataset
Addisson Salazar, Luis Vergara, Gonzalo Safont
Institute of Telecommunications and Multimedia Applications,
Universitat Politecnica de Valencia, Valencia, Spain

CSCI-ISSC: SMART CITIES AND SMART MOBILITY

IoT Smart Home Devices' Security, Privacy, and Firmware Labeling System
Naif Waheb Rajkhan, Jia Song
Department of Computer Science, University of Idaho, Moscow, Idaho, USA

An Efficient CNN-based Approach for Automatic Brazilian License
Plate Recognition
Joao Pedro Cabral, Vitor Gaboardi Dos Santos, Camila Souza, Alison Silva,
Abraao Dantas, Nelio Cacho, Frederico Lopes, Daniel Araujo
Digital Metropolis Institute, Federal University of Rio Grande do Norte,
Natal, Brazil; Department of Informatics and Applied Math, Federal
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Model-Based Testing of Smart Home Systems Using EFSM and CEFSM
Afnan Albahli, Anneliese Andrews
Department of Computer Science, University of Denver, Colorado, USA

Drowsiness Detection Systems: Comparison and Technical Criteria for
Industrial Deployment
Ralf Luis de Moura, Debora de Souza Martins,
Luciana de Land Farias Ceotto
Operational Technology Architecture, Vale S/A, Vitoria, Brazil;
Operational Technology Architecture, Tata Consultancy Service,
Vitoria, Brazil

P2P Power Trading between Nanogrid Clusters Exploiting Electric
Vehicles and Renewable Energy Sources
Sangkeum Lee, Hojun Jin, Sarvar Hussain Nengroo, Dongsoo Har
Environment ICT Research Section, Electronics and Telecommunications
Research Institute (ETRI), Daejeon, South Korea; The Cho Chun
Shik Graduate School of Green Transportation, Korea Advanced Institute
of Science and Technology (KAIST), Daejeon, South Korea

CSCI-ISMC: MOBILE COMPUTING, WIRELESS NETWORKS, & SECURITY

Web-based Malware Detection for Android OS
Hani Alshahrani, Ali Alshehri, Abdulrahman Alzahrani, Huirong Fu
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Najran University, Najran, Saudi Arabia;
University of Tabuk, Tabuk, Saudi Arabia; University of Hafer
Al Batin, Hafer AlBatin, Saudi Arabia; Department of Computer
Science and Engineering, Oakland University, Michigan, USA

An Enhanced VoIP Codec Transcoder to Enhance VoIP Quality for
IP Telephone Infrastructure
Thubelihle S. Zulu, Topside E. Mathonsi
Department of Information Technology, Tshwane University of
Technology, Pretoria, South Africa

(n, n) XOR-based Visual Cryptography Schemes with Different
Meaningful Shares
An-Hui Lo, Justie Su-Tzu Juan
Department of Computer Science & Information Engineering,
National Chi Nan University, Nantou, Taiwan

Evaluation of the Security Level of Aruba Network Wireless
Networks in Educational Institutions
De la Cruz De la Cruz Paola, Dominguez Dominguez Rusbel
Universidad de Montemorelos, Mexico

CSCI-ISSE: SOFTWARE ENGINEERING

Converting Android Native Apps to Flutter Cross-Platform Apps
Yoonsik Cheon, Carlos Chavez
Department of Computer Science, The University of Texas at
El Paso, El Paso, Texas, USA

Design of Software Applications using Access and Actions Control
Policies based on Trust
Marcel Danilescu, Laura Danilescu
ASWIC Ltd., Chisinau, Republic of Maldova; Department of Computers
and Information Technology, "Dunarea de Jos" University of Galati,
Galati, Romania

A Metric for Software Service Outsourcing Contracts within the
Scope of the Brazilian Federal Public Administration
Washington Almeida, Felipe Furtado, Fernando Escobar
Center of Advanced Studies and Systems of Recife - C.E.S.A.R.,
Recife, Brazil; University of Minho - UMinho, Guimaraes, Portugal

Towards a Framework to compare Blockchain Platforms for Smart Contracts
Giuseppe A. Di Lucca, Maria Tortorella
Department of Engineering, University of Sannio, Benevento, Italy

CSCI-ISPD: PARALLEL & DISTRIBUTED COMPUTING

Human-in-the-Loop Automatic Data Migration for a Large Research
Computing Data Center
Fang (Cherry) Liu, Michael D. Weiner, Kevin Manalo, Aaron Jezghani,
Christopher J. Blanton, Christopher Stone, Kenneth Suda,
Nuyun Zhang, Dan Zhou, Mehmet Belgin, Semir Sarajlic, Ruben Lara
Partnership for an Advanced Computing Environment (PACE), Georgia
Institute of Technology, Atlanta, Georgia, USA; Research Computing
and Data Facilitation Service, North Carolina State University,
Raleigh, North Carolina, USA; Microsoft Inc., Atlanta, Georgia, USA

CSCI-ISCS: COMPUTATIONAL SCIENCE

A Novel Solution to Perform Real-Time ETL Process based on
Non-Intrusive and Reactive Concepts
Flavio de Assis Vilela, Ricardo Rodrigues Ciferri
Department of Computing, Federal Institute of Goias, Brazil;
Department of Computing, Federal University of Sao Carlos,
Sao Paulo, Brazil

Markov Regime Switching Analysis for the Pandemic and the
Dynamics of German Market
Kangrong Tan, Shozo Tokinaga
Faculty of Economics, Kurume University, Kurume, Japan;
Department of Economics, Kyushu University, Fukuoka, Japan

AutoTR: Efficient Reformatting Text Spread Out in a DOM Tree

for Text-Analytic Applications
Changfeng Yu, Cheng Zhang, Hao Zhang, Jie Wang
University of Massachusetts Lowell, Massachusetts, USA

Robust Asynchronous P Systems for Basic Operations
Naoki Tojima, Akihiro Fujiwara
Graduate School of Computer Science and Systems Engineering,
Kyushu Institute of Technology, Iizuka, Fukuoka, Japan

Multiple Story Generation by "Story Techniques that are
Included in a Story"
Jumpei Ono, Takashi Ogata
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Seishincho, Edogawa, Tokyo, Japan; Faculty of Software and
Information Science, Iwate Prefectural University, Sugo,
Takizawa, Japan

E-book Circulation System Based on Blockchain
Cheng-Chi Lee, Chung-Wei Li, Chun-Ta Li, Chin-Ling Chen
Library and Information Science, Fu Jen Catholic University,
New Taipei City, Taiwan; Information Management, Tainan
University of Technology, Tainan, Taiwan; Computer Science
and Information Engineering, Chaoyang University of
Technology, Taichung, Taiwan

Analysis of Routing Entropy of Hyperbolic Trees
Zalan Heszberger, Andras Gulyas, Andras Majdan, Jozsef Biro
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MTA-BME Information Systems Modelling Research Group,
Budapest, Hungary

CSCI-ISCI: COMPUTATIONAL INTELLIGENCE

Towards 'Serendipity Engineering for Seductive Hypermedia' and
'User Analysis using Socialnomics': The Role of Ecological Cognition
Jonathan Bishop, Mark M. H. Goode
Congress of Researchers and Organisations for Cybercommunity,
E-Learning and Socialnomics, Berkeley, England, UK;
Cardiff Business School, Cardiff University, Cardiff, Wales, UK

Accordion Autoencoders (A^2E) for Generative Classification with Low
Complexity Network
Kevyn Kelso, Byeong Kil Lee
Department of Electrical and Computer Engineering, University of
Colorado, Colorado Springs (UCCS), Colorado, USA

Knowledge Inference and Knowledge Completion Methods using
Neuro-Symbolic Inductive Rules
Won-Chul Shin, Hyun-Kyu Park, Young-Tack Park
Computer Science Department, Soongsil University, Seoul, South Korea

Ant Colony Optimization for Balanced Multiple Traveling Salesmen Problem
Sun Bing, Wang Chuan, Yang Qiang, Liu Weili, Yu Weijie
College of Computer and Information, Henan Normal University,
Henan, China; College of Software, Henan Normal University,
Henan, China;; College of Artificial Intelligence, Nanjing University
of Information Science and Technology, Nanjing, China; School of
Computer Science, Guangdong Polytechnic Normal University,
Guangdong, China; School of Information Management, Sun Yat-sen
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Application of an Input-Output Pairings Selection Methodology to
Control Multivariable Systems based on Multi-Objective Optimization

Victor Huilcapi, Xavier Blasco, Juan M. Herrero, Alberto Pajares,
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Producao e Sistemas (PPGEPS), Pontificia Universidade Catolica
do Parana (PUCPR), Curitiba, Brazil

Splatter: An Efficient Sparse Image Convolution for Deep Neural Networks
Tristan Lee, Byeong Kil Lee
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of Colorado, Colorado Springs (UCCS), Colorado, USA

Zero-Shot Cross-Lingual Transfer in Legal Domain Using Transformer Models
Zein Shaheen, Gerhard Wohlgenannt, Dmitry Mouromtsev
ITMO University - Russia, Saint Petersburg, Russia

CSCI-ISCB: COMPUTATIONAL BIOLOGY

SARS-CoV-2 Variant Strains and Viral Phylodynamics of ORF1a-1b
Genetic Aspects in South America
Luiz Henrique Pontes Dos Santos, Stela Mirla da Silva Felipe,
Cristina Pacheco Santos Martin, Jannison Karlly Cavalcante Ribeiro,
Raquel Martins de Freitas, Eric Petterson Viana Pereira,
Juliana Osorio Alves, Paula Matias Soares, Valdevane Rocha Araujo,
Claudio Gleidiston Lima da Silva, Maria Izabel Florindo Guedes,
Vania Marilande Ceccatto
Brazil