39th International Conference on Computers And Their Applications
(CATA 2024)

PROGRAM

March 18–19, 2024

Holiday Inn Downtown-Superdome

New Orleans, Louisiana, USA

Sponsored by

International Society for Computers and Their Applications

39th International Conference on
Computers And Their Applications
(CATA 2024)

SPONSOR

International Society for Computers and Their Applications (ISCA)

General Chair:	**Dr. Ying Jin, California State University, Sacramento, USA**
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	Dr. Mohammad Hossain, University of Minnesota Crookston, USA

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Maninder Singh	St. Cloud State University
Swathi Kaluvakuri	Enterprise Fleet Management

Program at a Glance (All times in CDT)

Monday 3/18	7:30 am - 8:30 am	**Registration and Breakfast (Coffee and Pastry)**
	8:45 am – 9:00 am	**Opening**
	9:00 am –10:00 am	**Keynote I: (Common to both conferences)**
	10:00 am – 10:30 am	Break
	10:30 am -12:00 pm	**Session 1:** Paper ID: 11 Paper ID: 04 Paper ID: 27 Paper ID: 26
	12:00 pm – 1:30 pm Conference Luncheon (Common to both conferences)	
	1:30 pm – 3:00 pm	**Session 2:** Paper ID: 15 Paper ID: 16 Paper ID: 24 Paper ID: 28
	3:00 pm – 3:30 pm	Break
	3:30 pm – 5:00 pm	**Session 3:** Paper ID: 06 Paper ID: 10 Paper ID: 17 Paper ID: 22

Tuesday 3/19	8:00 am – 9:00 am	**Registration and Breakfast (Coffee and Pastry)**
	9:00 am – 10:00 am	**Keynote II: (Common to both conferences)**
	10:00 am – 10:30 am	Break
	10:30 am –12:30 pm	**Session 4:** Paper ID: 18 Paper ID: 13 Paper ID: 14 Paper ID: 20 Paper ID: 07
	12:30 pm – 1:00 pm Lunch (on your own)	
	1:00 pm – 2:00 pm	**Session 5:** Paper ID: 03 Paper ID: 21 Paper ID: 25

7:30 a.m. – 3:30 p.m.   **REGISTRATION and BREAKFAST**
(Coffee, Tea, pastries)
Location: Bayou Ballroom FOYER

8:45 a.m. – 9:00 a.m.   **WELCOME**
Ying Jin, California State University, Sacramento
Ajay Bandi, Northwest Missouri State University, USA
Mohammad Hossain, University of Minnesota Crookston, MN, USA
Location: Bayou Ballroom A

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

Dr. Sing-Hoi Sze, Assoc. Professor
Dept. of Computer Science and Engineering
Texas A&M University

Application of high-throughput sequencing to answer basic biological questions on RNA polymerase II activity.

Location: Bayou Ballroom A

10:00 a.m. – 10:30 a.m. COFFEE BREAK (Bayou Ballroom FOYER)

SESSION 1

ALGORITHM AND AI - I
Monday, March 18, 10:30 a.m. – 12:00 p.m.
Session Chair: Dr. Ying Jin, California State University, Sacramento
Location: Bayou Ballroom A

1. **Constant Storage for Storing Shortest Paths for a Polyhedron**
   Jindong Chen (Google Research), Sraawya Chintala, and Yijie Han
   (University of Missouri - Kansas City)

2. **A Framework for Internet of Things with Blockchain**
   Henry Hexmoor and Ebrahim Maghsoudlou
   (Southern Illinois University Carbondale)

3. **Generative AI Project Life Cycle: A Case Study**
   Ajay Bandi and Hemanth Kagitha (Northwest Missouri State University)

4. **Bike Sharing Systems via Birth-Death Process and Simulation Modeling**
   Lena Wallwork, Uchechukwu Obinwanne, Wenying Feng (Trent University)

12:00 p.m. – 1:30 p.m. CONFERENCE LUNCHEON and
BEST PAPER AWARDS

SESSION 2

COMPUTER SECURITY
Monday, March 18, 1:30 p.m. – 3:00 p.m.
Session Chair: Dr. Mohammad Hossain (University of Minnesota Crookston)
Location: Bayou Ballroom A

1. **A Survey of Digital Security in Applications and Networking**
   Dylan Damiano, Isabella Mitchell, and Emdad Ahmed (Central State University)

2. **The Implementations and Applications of Elliptic Curve Cryptography**
   Meilin Liu (Wright State University), Kirill Kultinov (Elektrobit), and Chongjun Wang (Nanjing University)
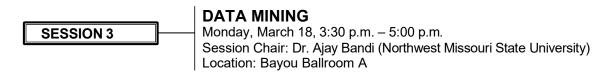
3. **Evaluating Cybersecurity Risks in NLP Models: Google Bard as Bard of Prey and ChatGPT as Cyber Crime Aide**
   Md Minhaz Chowdhury, Cameron Wohlbach (East Stroudsburg University of Pennsylvania), and Shadman Latif (University of Texas at San Antonio)

4. **Data Security in the Cloud Using pTree-based Homomorphic Intrinsic Data Encryption System (pHIDES)**
   Mohammad Hossain (University of Minnesota Crookston) and Vinayak Sharma (University of Windsor)

3:00 p.m. – 3:30 p.m.   COFFEE BREAK (Bayou Ballroom FOYER)

SESSION 3

DATA MINING
Monday, March 18, 3:30 p.m. – 5:00 p.m.
Session Chair: Dr. Ajay Bandi (Northwest Missouri State University)
Location: Bayou Ballroom A

1. **Exploring Sentiment on Campus. A Twitter Sentiment Analysis on University Tweets**
   Alina Campan, Murtadha Almakki, Trang Do, and Traian Marius Truta (Northern Kentucky University)

2. **Error Assessment for Multi-Join AQP using Bootstrap Sampling**
   Sabin Maharjan, Lucy Kerns, Xiangjia Min, Feng Yu (Youngstown State University)

3. **Unveiling Text Mining Potential: A Comparative Analysis of Document Classification Algorithms**
   Sindhuja Penchala, Saydul Akbar Murad (Univ. of Southern Mississippi), Indranil Roy (Southeast Missouri State University), Bidyut Gupta (Southern Illinois University), and Nick Rahimi (Univ. of Southern Mississippi)

4. **AI and Cybersecurity: Collaborator or Confrontation**
   Collin Orner and Md. Chowdhury (East Stroudsburg University)

8:00 a.m. – 12:30 p.m.   **REGISTRATION – Coffee, tea, pastries**
Bayou Ballroom FOYER

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

Prof. Narayan C. Debnath, Ph.D., D.Sc.
Founding Dean, School of Computing and Information Technology
And
Head, Department of Software Engineering
Eastern International University, Vietnam

COMPUTATIONAL INTELLIGENCE: APPLICATIONS AND LIMITATIONS

Location: Bayou Ballroom A

10:00 a.m. – 10:30 a.m. COFFEE BREAK: Bayou Ballroom FOYER

SESSION 4	**ALGORITHM AND AI - II** Tuesday, March 19, 10:30 a.m. – 12:30 p.m. Session Chair: Dr. Ying Jin, California State University, Sacramento Location: Bayou Ballroom A

1. **Efficient Communication and Navigation for Soccer Robots using a Time Petri net Model**
   Shane Chiovarouand, Madison Bland, and Seung-yun Kim The College of New Jersey)

2. **Artificial Intelligence Usage and Data Privacy Discoveries within mHealth**
   Jennifer Schulte (Dakota State University)

3. **On further improvement of data look-up latency in Residue Class (RC) based Peer-2-Peer networks**
   Indranil Roy, Reshmi Mitra (Southeast Missouri State University), Swathi Kaluvakuri (Enterprise Fleet Management, St. Louis, Missouri), Nick Rahimi (Univ. of Southern Mississippi), and Bidyut Gupta (Southern Illinois University)

4. **Optimizing Time Complexity: A Comparative Analysis of Techniques in Recursive Algorithms - A Case Study with Path Sum Algorithm in Graphs and Binary Trees**
   Jonathan Shields and Thitima Srivatanakul (York College, CUNY)

5. **Rear-end Vehicle Collision Avoidance using Reinforced Learning**
   Nashwan Sebi, Ka C Cheok, and Narendra Kintali (Oakland University)

12:30 p.m. – 1:00 p.m. LUNCH (*(on your own)*

SESSION 5	**DIGITAL COMPUTING** Tuesday, March 19, 1:00 p.m. – 2:00 p.m Session Chair: Dr. Ajay Bandi (Northwest Missouri State University) Location: Bayou Ballroom A

1. **Evaluating the Use of ChatGPT for Parallel Programming with OpenACC**
   Evaldo Costa, Gabriel Silva (UFRJ, Rio de Janeiro, Brazil)

2. **Pseudorandom Binary Generator Based on the Combination of Linear Feedback Shift Registers with Nonlinear Filtering Function**
   Narayan Debnath (International University Vietnam), Andrés Francisco Farías (Universidad Nacional de La Rioja), Germán Antonio Montejano (Universidad Nacional de San Luis), Andrés Alejandro Farías (Universidad Nacional de La Rioja), Ana Gabriela Garis, and Daniel Riesco (Universidad Nacional de San Luis)

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3. **Digital Transformation: A Quality Model as a guide to achieve a digital product focused on people**
   Narayan Debnath (International University Vietnam), Mario Gabriel Peralta, Carlos Humberto Salgado, Lorena Baigorria, Daniel Riesco, and Germán Montejano (Universidad Nacional de San Luis)

2:00 p.m.   CONFERENCE ENDS