

**The International Conference on Applied Mathematics, Modelling and  
Intelligent Computing (CAMMIC 2021)**

**ZOOM Conference ID: 975 129 3611**

**March 26-28, 2021  
Guilin Park Hotel (桂林桂湖饭店)  
Guilin, China**

## **Honorary Chair**

Prof. Yu-Dong Zhang, School of Informatics, University of Leicester, UK

## **Program Committees**

Prof. Xuebin Chen, North China University of Science and Technology, China

Prof. Zhihui Zhan, South China University of Technology, China

A. Prof. Chee Wei Tan, City University of Hong Kong, China

A. Prof. Hua Zhou, Wuhan University, China

A. Prof. Erzhou Zhu, Anhui University, China

A. Prof. Bing Xiao, ShaanXi Normal University, China

Dr. Ka-Chun Wong, City University of Hong Kong, China

## **International Technical Program Committees**

Prof. Taufik Abrao, Londrina State University, Parana, Brazil

A Prof. Parveen Lata, Punjabi University Patiala, India

Dr. Srinivasarao Thota, Adama Science and Technology University, Ethiopia

Dr. Mohd Hafiz bin Mohd, Universiti Sains Malaysia, Malaysia

Prof. Hongxing Liu, Wuhan University of Technology, China

Prof. Masri Ayob, Universiti Kebangsaan Malaysia (UKM), Malaysia

Assoc. Prof. Dr. Ang Miin Huey, Universiti Sains Malaysia, Malaysia

Assoc. Prof. Noor Atinah Ahmad, Universiti Sains Malaysia, Malaysia

Dr. Ng Zhen Chuan, Universiti Sains Malaysia, Malaysia

Dr. Wen Chean Teh, Universiti Sains Malaysia, Malaysia

A Prof. Erdal Kayacan, Aarhus University, Denmark

Prof. Min Dai, National University of Singapore, Singapore

Prof. Weizhu Bao, National University of Singapore, Singapore

A. Prof. Zhang Jin-Ting, National University of Singapore, Singapore

A. Prof. Antti Rasila, Guangdong Technion-Israel Institute of Technology

Prof. Nikolaos M. Freris, University of Science and Technology of China (USTC)

Prof. Hicham Medromi, University of Hassan II Casablanca

Prof. Zainab Abu Bakar, I-Madinah International University, Malaysia

# TABLE OF CONTENTS

<b>Conference Schedule .....</b>	<b>1</b>
<b>Conference Agenda .....</b>	<b>2</b>
Session I: Keynote Speeches .....	2
Session II: Keynote Speeches & Presentations .....	3
<b>Keynote Speeches.....</b>	<b>4</b>
Keynote Speech 1: Efficient Data Parallelism in Distributed Stream Processing Systems.....	4
Keynote Speech 2: Intelligent Computing for COVID-19 Diagnosis .....	4
Keynote Speech 3: Conceptual Story Modeling and Model-Driven Architecture for Story Creation .....	5
Keynote Speech 4: TBD.....	5
Keynote Speech 5: Algorithms to find interesting interpretable patterns in customer transaction data .....	6
<b>Instructions for Presentations .....</b>	<b>7</b>
<b>Notice for Participants .....</b>	<b>8</b>

# Conference Schedule

**Time:** March 26-28, 2021

**Location:** Guilin Park Hotel (桂林桂湖饭店)

<b>Date</b>	<b>Time</b>	<b>Activity</b>	<b>Venue</b>
<b>March 26</b> Afternoon	13:00-17:00	Registration	Lobby
	<b>18:00-20:00</b>	<b>Dinner</b>	<b>Xinghe Room</b> (星河阁) <b>2<sup>nd</sup> Floor</b>
<b>March 27</b> Morning	09:00-10:30	Keynote Speeches	Xianghe Room [祥和厅] 1 <sup>st</sup> Floor
	10:30-10:45	Tea Break/Group Photo	
	10:45-12:05	Keynote Speeches	
	<b>12:00-14:00</b>	<b>Lunch</b>	<b>Xinghe Room</b> (星河阁) <b>2<sup>nd</sup> Floor</b>
<b>March 27</b> Afternoon	14:00-14:45	Keynote Speche	Xianghe Room [祥和厅] 1 <sup>st</sup> Floor
	15:30-15:45	Tea Break	
	15:35-18:00	Oral & Poster Presentations	
	<b>18:00-20:00</b>	<b>Dinner</b>	<b>Xinghe Room</b> (星河阁) <b>2<sup>nd</sup> Floor</b>

# Conference Agenda

## Session I: Keynote Speeches

Session Chair: TBD

Xianghe Room[祥和厅], 1st Floor

09:00-12:00, Saturday Morning, March 27, 2021

Time	Title	Speaker	Affiliation
09:00-09:45	Efficient Data Parallelism in Distributed Stream Processing Systems	Prof. Hanhua Chen	Huazhong University of Science and Technology, China
09:45-10:30	Intelligent Computing for COVID-19 Diagnosis	Prof. Yu-Dong Zhang	School of Informatics, University of Leicester, UK
10:30-10:45	<b>Photography &amp; Tea Break</b>		
10:30-10:45	Conceptual Story Modeling and Model-Driven Architecture for Story Creation	Prof. Hongxing Liu	Wuhan University of Technology, China
10:45-11:25	<b>TBD</b>	Prof. Masri Ayob	Universiti Kebangsaan Malaysia (UKM), Malaysia

## Session II: Keynote Speeches & Presentations

Session Chair: TBD

Xianghe Room[祥和厅], 1st Floor

14:00-18:00, Saturday Afternoon, March 27, 2021

Time	Title	Speaker	Affiliation
14:00-14:45	TBD	A Prof. Erdal Kayacan	Electrical and Computer Engineering, Aarhus University, Denmark
Oral 1-1	Research on Demand Forecast Method of Aviation Material Spare Parts Based on Rough Set and Wavelet Neural Network	Shujiang Huang	Air Force Engineering University, China
Oral 1-2	Design of the Corn Field Straw Chopper Transmission System Based on Virtual Prototype Technology	Yanying Li	Henan University of Science and Technology, China
Oral 1-3	A Survey of Automatic Text Summarization Technology Based on Deep Learning	Zhiyu Chen	State Key Laboratory of Mathematical Engineering and Advanced Computing
Poster	The supply chain coordination model based on sales return and efforts	Yichuan Sun	Anhui Institute of Information Technology, China

Keep Updating...

# Keynote Speeches

## Keynote Speech 1: Efficient Data Parallelism in Distributed Stream Processing Systems

**Speaker:** Prof. Hanhua Chen, Huazhong University of Science and Technology, China

**Time:** 09:00-09:45, Saturday Morning, March 27, 2021

**Venue:** Xianghe Room[祥和厅], 1<sup>st</sup> Floor



### Abstract

The recent advances in distributed stream processing systems bring the community great capability to process extremely huge volumes of real-time data streams. To achieve high processing time-efficiency, distributed stream processing systems exploit various data parallelisms technology for partitioning the stream workloads. However, the highly skewed distribution of real-world stream data raises unique challenges to distributed stream processing systems. Existing stream workload partitioning schemes usually use a "one size fits all" design, leading to notable unsatisfied system throughput and processing latency.

In this speech, we show that the key to efficient stream partitioning is to identify the popularity of the stream data. We propose PStream, a highly time-efficient distributed stream processing system which uses a novel differentiated scheme for data parallelism for stream data partitioning. PStream leverages a novel light-weighted probabilistic counting scheme for identifying the currently hot keys in dynamic real-time streams. The scheme is extremely efficient in computation and memory consumption, so that the predictor based on it can be well integrated into processing instances in the system. We implement PStream on top of Apache Storm and conduct comprehensive experiments using large-scale real-world traces to evaluate the system performance. Results demonstrate the high efficiency of PStream.

## Keynote Speech 2: Intelligent Computing for COVID-19 Diagnosis

**Speaker:** Prof. Yu-Dong Zhang, School of Informatics, University of Leicester, UK

**Time:** 09:45-10:30, Saturday Morning, March 27, 2021

**Venue:** Xianghe Room[祥和厅], 1<sup>st</sup> Floor



### Abstract

Intelligent computing is a rapidly advancing field in recent years. It is a set of nature-inspired computational methodologies and approaches to address complex real-world problems

to which mathematical or traditional modelling can be useless. COVID-19 is a pandemic disease, which already caused more than 1.7 million deaths till now. This invited speak presents the recent intelligent computing progresses in COVID-19 diagnosis.

### **Keynote Speech 3: Conceptual Story Modeling and Model-Driven Architecture for Story Creation**

**Speaker:** Prof. Hongxing Liu, Wuhan University of Technology, China

**Time:** 10:45-11:30, Saturday Morning, March 27,2021

**Venue:** Xianghe Room[祥和厅], 1<sup>st</sup> Floor



#### **Abstract**

Novels, movies, and other genres of stories are popular. This paper studies the methods of computer-aided story creation by means of domain-specific conceptual modeling and model-driven architecture. Firstly, a new conceptual modeling language for story is presented, and its abstract syntax and concrete syntax are defined. The conceptual story model is a kind of graphical, highly abstract, and genre-independent model that describes the events, characters, settings, and the relationships in a given world. We developed a software tool to support the conceptual modeling. Secondly, a model-driven architecture for story creation is proposed, which consists of a series of related models, languages, and tools to support the modeling and transformation. In the architecture, a story work is represented by story models, and the story creation becomes a modeling process from abstract to concrete. We take the genre of story as the platform, so the conceptual model is a platform-independent model, which can be transformed to various platform-specific models. We believe the architecture is a new way for story creation and can make sense for the creative industry.

### **Keynote Speech 4: TBD**

**Speaker:** Prof. Masri Ayob, Universiti Kebangsaan Malaysia (UKM), Malaysia

**Time:** 11:30-12:15, Saturday Morning, March 27,2021

**Venue:** Xianghe Room[祥和厅], 1<sup>st</sup> Floor



#### **Abstract**

TBD



## **Keynote Speech 5: Algorithms to find interesting interpretable patterns in customer transaction data**

**Speaker:** Assco. Prof. Erdal Kayacan, Electrical and Computer Engineering, Aarhus University, Denmark

**Time:** 14:00-14:45, Saturday Afternoon, March 27,2021

**Venue:** Xianghe Room[祥和厅], 1<sup>st</sup> Floor



### **Abstract**

Request for increased, almost perfect, accuracy and efficiency of aerial robots pushes the operation to the boundaries of the performance envelope and, thus, induces a need for reliable operation at the very limits of attainable performance. The use of advanced learning algorithms, which can learn the operational dynamics online and adjust the operational parameters accordingly, might be a candidate solution to all the aforementioned problems. This talk will focus both model-based and model-free learning methods to handle various real-time aerial robot control problems. Furthermore, due to the cost associated with data collection and training, the topics related to approaches such as transfer learning will also be mentioned to transfer knowledge between aerial robots and thereby increase the efficiency of their control. Not but not the least, some state-of-the-art drone applications, e.g. autonomous drone racing and fully autonomous cinematography system for aerial drones with the aim of letting the onboard artificial intelligence completely take over the film directing, will also be elaborated.

# **Instructions for Presentations**

## **Oral Presentation**

1. **Timing:** a maximum of 15 minutes total, including speaking time and discussion. Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
2. You can use CD or USB flash drive (memory stick), make sure you scanned viruses in your own computer. Each speaker is required to meet her/his session chair in the corresponding session rooms 10 minutes before the session starts and copy the slide file (PPT or PDF) to the computer.
3. It is suggested that you email a copy of your presentation to your personal inbox as a backup. If for some reason the files can't be accessed from your flash drive, you will be able to download them to the computer from your email.
4. Please note that each session room will be equipped with a LCD projector, screen, point device, microphone, and a laptop with general presentation software such as Microsoft PowerPoint and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fonts and symbols. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
5. **Movies:** If your PowerPoint files contain movies please make sure that they are well formatted and connected to the main files.

## **Poster Presentation**

1. Maximum poster size is 59.4 CM wide by 84.1 CM high (A1) .
2. Posters are required to be condensed and attractive. The characters should be large enough so that they are visible from 1 meter apart.
3. Please note that during your poster session, the author should stay by your poster paper to explain and discuss your paper with visiting delegates.

# Notice for Participants

欢迎各位专家学者们参加 2021 年应用数学、建模与智能计算国际研讨会(CAMMIC2021), 为了您在会议期间方便顺利, 请注意以下事项:

Welcome all leaders and scholars to The International Conference on Applied Mathematics, Modelling and Intelligent Computing (CAMMIC 2021). In order to make your work smooth during the conference, please pay attention to the following matters:

## 一、 参会 Conference

1.会场: 祥和厅, 1 楼, 桂林桂湖酒店

Conference Room: Xianghe Room, 1<sup>st</sup> Floor

2. 请您佩戴好参会证, 按照会议日程上的安排, 提前 10 分钟凭证入场;

Please wear the conference pass and enter the venue 10 minutes in advance according to the schedule;

3. 参会期间, 请您务必把手机调为静音或者关闭手机; 会议期间请勿随意走动。

Please set your mobile phone to silent mode or turn off the phone during the conference; Please do not walk around during the conference.

4. 请注意保管好自己的随身物品。

Please take care of your belongings.

## 二、 就餐 Meal

1. 用餐地点: 星河阁, 2 楼, 桂林桂湖酒店

Place: 2<sup>nd</sup> Floor, Guilin Park Hotel

2. 会务组免费提供餐券, 包含了 3 月 26 号晚餐、27 号午餐+晚餐

The conference group provides meal coupons for free, including dinner on March 26, lunch + dinner on March 27;

3. 一人一餐券, 请保管好, 当天有效, 过期作废。

Please keep it well, one coupon for one person, valid on specified day only.

## 三、 酒店信息 Hotel Information

1. 桂林桂湖饭店 中国桂林叠彩区螺蛳山路 1 号

Guilin Park Hotel Address: No.1 Luosishan Road, Guilin, 541001, Guangxi, China

2. 房间预订: 大床房 290 元/晚 (含早), 标间 270 元/晚 (含早)。如需预订酒店, 请编辑短信"AEIC 桂林站 CAMMIC+姓名+入住日期+退房日期+房型+入住人数"发送至 13737735558 (秦经理), 预订结果以收到确认为准。

Room Reservation: Standard single room: RMB 290/ night, Standard double room: RMB 270/ night (about USD 42/ night). You can make a reservation by calling the front desk +86 13737735558 before November 6, please tell that you are a guest of "AEIC Guilin academic conference (CAMMIC 2021)".

## 四、 联系我们 Contact us

会议期间, 如果您需要帮助, 可以咨询以下会务组工作人员。

If you need help during the conference, you can ask the following staff.

会务负责人: 王老师电话 (同微信) 19139737380

Conference Secretary: Ms. Vivian Wang: + 86 19139737380

Email: cammic2021@163.com