ICICM 2024

THE PROCEEDINGS OF

The 14th International Conference on INFORMATION COMMUNICATION AND MANAGEMENT

November 6-8 2024
Virtual Conference

ICPS

Published by ACM



The Association for Computing Machinery 1601 Broadway, 10th Floor New York, New York 10019, USA

ACM COPYRIGHT NOTICE. Copyright © 2024 by the Association for Computing Machinery, Inc. Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from Publications Dept., ACM, Inc., fax +1 (212) 869-0481, or permissions@acm.org.

For other copying of articles that carry a code at the bottom of the first or last page, copying is permitted provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, +1-978-750-8400, +1-978-750-4470 (fax).

ACM ISBN: 979-8-4007-1747-5

The 14th International Conference on Information Communication and Management (ICICM 2024)

Table of Contents

Preface	iv
Committee	v
Chapter 1 – Data-based Information Management and Service Platform Development	
New Information Technologies and Management: Digitalization Xiao Wen Lu, Atour Taghipour	1
A Taxonomy for Smart Building Data Sensitivity Alaa Alkrud, John Mace, Sara Dunn	6
Multi-flow Process Mining for Comprehensive Simulation Model Discovery Atieh Khodadadi, Sanja Lazarova-Molnar	15
The Microservice Based Architecture for IoT Systems in Agriculture and Aquaculture Thai Minh Truong, Khang Quy Huynh, Thao Thi Thu Ngo, Ca Luu, Bang Minh Le	22
Dominance Analyses Reduction in Skyline Query Processing over Data Stream with Data Mining Technique Mudathir Ahmed Mohamud, Hamidah Ibrahim, Fatimah Sidi, Siti Nurulain Mohd Rum	29
User Experience and Information Security Implications of Digital Identity Wallets Max Sauer, Christoph Becker, Andreas Oberweis, Simon Pfeifer, Akim Stark, Jan Sürmeli	36
Comprehensive Technological Model for Monitoring Personnel Performance in Coffee Plantations through Harvest Container Tracking and User ID: Optimizing Harvest Efficiency through Real-time Performance Tracking in Agricultural Operations Helen Quinte Torres, Leslie Siany Condor Lazaro, Estefany Angeli Magro de la Cruz, Diana Paola Chipana Gago	46
A Flexible Model for Process and Resource Related Analysis of Document Workflows Juris Rāts, Inguna Pede	53

Preface

On behalf of the organizing committee, it is our great honor to welcome you to the proceedings of the 14th International Conference on Information Communication and Management (ICICM 2024), held in Paris, France (Virtual), on November 6–8, 2024.

This conference serves as a platform for scientists, including professors, doctoral students, and postdoctoral researchers, to explore the latest advancements, challenges, and opportunities in the dynamic fields of information communication and management. It also facilitates an exchange of ideas, applications, and experiences among delegates from various sectors, fostering collaborations and building partnerships for future innovation. This conference has attracted presenters and authors from Denmark, France, Germany, Latvia, Malaysia, Peru, the United Kingdom, and Vietnam, who have shared their latest research in these fields.

All papers included in these proceedings underwent strict peer review by the conference committee and international reviewers, ensuring high quality and relevance. This volume features eight papers covering topics such as data-driven information management and service platform development. We extend our heartfelt gratitude to the authors for their valuable contributions and to the reviewers and program committee members for their dedication to maintaining the excellence of this publication.

Special thanks go to the speakers, they are Prof. Jalel Ben-Othman from the University of Paris 13, France; Prof. Hesham Dinana from The American University in Cairo, Egypt; Prof. Yu-wang Chen from The University of Manchester, UK; and Prof. Paras Nath Singh from CSE/ISE in GMRIT, India, whose supports and efforts have been pivotal to the success of ICICM 2024.

As we move forward, the insights gathered during this event will undoubtedly contribute to the ongoing discourse in these fields and inspire future research endeavors. We extend our gratitude to all participants, and organizers, whose dedication made ICICM 2024 a resounding success.

Sincerely,
The Organizing Committee
ICICM 2024

The 14th International Conference on Information Communication and Management (ICICM 2024)

Committee

Conference Chairs

Alexander Balinsky Cardiff University, UK

Ezendu Ariwa University of Bedfordshire, UK

Conference Co-Chairs

Atour Taghipour Normandy University, France

Hesham Dinana American University in Cairo, Egypt

Program Chairs

Jalel Ben-Othman University of Paris 13, France

Kazumasa Oida Fukuoka Institute of Technology, Japan

Yoshifumi Manabe Kogakuin University, Japan Paulo Batista University of Évora, Portugal

Publicity Chairs

Boris Kovalerchuk Central Washington University, USA Hyunbum Kim Incheon National University, S. Korea

Regional Chairs

Babek Erdebilli Yıldırım Beyazıt University, Turkey Reza Kiani Mavi Edith Cowan University, Australia

Technical Committee Chairs

Luisa AlvimUniversity of Évora, PortugalNelson VaquinhasUniversity of Évora, PortugalCristina FreitasUniversity of Coimbra, Portugal

Technical Committee

Aakash Alurkar San Jose State University, USA

Abhay Dutt Paroha Schlumberger, USA

Ahmet Yucesan Suleyman Demirel University, Turkey
Ali A. Alwan Al-juboori Ramapo College of New Jersey, USA
Benny Hardjono Pelita Harapan University, Indonesia
Desislava Paneva-Marinova Bulgarian Academy of Sciences, Bulgaria

Goh Wei Wei Taylor's University, Malaysia

Jing Ren Singapore University of Social Sciences, Singapore

John Mace Newcastle University, United Kingdom

Marek Bolanowski Rzeszow University of Technology, Poland

Nadire Cavus Near East University, Cyprus Naresh Kumar Reddy Panga Virtusa Corporation, USA Paulo Batista University of Évora, Portugal

Radwa A. Roshdy Higher Technological Institute, Egypt

Ramanan K Amrita College of Engineering and Technology, India R. Andrew Paskauskas Lithuanian Cybercrime Center of Excellence for Training,

Research and Education (L3CE), Lithuania

Reinhardt Botha Norway and Nelson Mandela University, South Africa

Songhui Yue Charleston Southern University, USA

Sundar Krishnan Angelo State University, USA

Xuhesheng Chen University of North Carolina at Chapel Hill, USA

Yohannes Kurniawan Bina Nusantara University, Indonesia Yu-Min Wang National Chi Nan University, Taiwan