

# CONFERENCE PROGRAM

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RCIS 2024

18th. International Conference on Research  
Challenges in Information Science, 14-17 May

Guimarães, Portugal

# PROGRAM OUTLINE

	Tuesday, 14 May 2024	Wednesday, 15 May 2024	Thursday, 16 May 2024	Friday, 17 May 2024
08:00 - 08:30		Registration		
08:30 - 09:00	Registration	RCIS 2024 Opening (08:45 - 09:00)	Registration	Registration
09:00 - 10:30	Room S1 Workshop "Exploring Ontology-based Design Interactions for Sustainability Research" Chairs: Greta Adamo and Max Willis	Small Auditorium Keynote Fabiano Dalpiaz Chair: João Araújo	Small Auditorium Keynote Carlos Ribas Chair: Maribel Yasmina Santos	Small Auditorium Keynote Barbara Weber Chair: Jose Luis de la Vara
10:30 - 11:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00 - 12:30	Room S1 Workshop "Exploring Ontology-based Design Interactions for Sustainability Research" Chairs: Greta Adamo and Max Willis	Room S1 Session 1 Sustainability Chair: Isabel Sofia Brito	Small Auditorium Session 2 Requirements and Architecture Chair: Jolita Raišytė	Room S1 Session 5 Data and Process Science Chair: Elena Kornyshova
12:30 - 14:00	Lunch	Lunch	Lunch	Room S1 Session 6 Security Chair: Renata Guizzardi
14:00 - 15:30	Room S1 Workshop "The 1st International Usable Security and Privacy for Emerging Technologies Workshop (ASPIRING)" Chairs: Mohamed Ghaleb, Kahrien De Moor, and Tong Li	Room S2 Workshop "2nd International Workshop on Cyber-Physical Social Systems for Sustainability" Chairs: Isabel Brito, Ivan Machado, and João Barros	Small Auditorium Tutorial 1 Unleash the Power of Engineering Questions Ademar Aguiar and Neil Harrison	Room S1 Workshop "2nd International Workshop on Cyber-Physical Social Systems for Sustainability" Chairs: Isabel Brito, Ivan Machado, and João Barros
15:30 - 16:00	Coffee Break	Coffee Break	Coffee Break	Small Auditorium Session 7 Data and Information Management Chair: Oscar Pastor
16:00 - 17:30	Room S1 Workshop "The 1st International Usable Security and Privacy for Emerging Technologies Workshop (ASPIRING)" Chairs: Mohamed Ghaleb, Kahrien De Moor, and Tong Li	Room S2 Workshop "2nd International Workshop on Cyber-Physical Social Systems for Sustainability" Chairs: Isabel Brito, Ivan Machado, and João Barros	Room S1 Comparing Products using Similarity Matching Mike Morrison and Hermann Kaind	Room S1 Session 8 Evaluation and Experience Studies Chair: Salil Assar
17:30 - 18:00	Walking Tour (Meeting point: Conference Venue at 18:00) (18:00 - 20:00)			RCIS 2024 Closing
	Conference Icebreaker (20:00 - 22:00)	Conference Reception (19:30 - 21:30)	Buses leave at 19:45. Meeting point: Conference Venue	Lunch
			Conference Dinner (20:00 - 23:00)	

## WORKSHOPS

### TUESDAY, MAY 14

09:00 – 10:30 [Room S1]

#### WORKSHOP EXPLORING ONTOLOGY-BASED DESIGN INTERACTIONS FOR SUSTAINABILITY RESEARCH

09:00 - 09:05 Welcome

09:05 - 09:20 Introduction to Social-Ecological Systems by Greta Adamo

09:20 - 09:35 Introduction to Participatory Sense-making by Max Willis

09:35 - 09:45 Icebreaker role-play interaction -- "I am a Concept"

09:45 - 10:25 Game and play session 1: SESsION Scripts

"Making sense of an ontology-based Conceptual Model through SESs scenarios"

"Exploring SESs scenarios using a conceptual model"

10:25-10:30 Activity debrief

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 [Room S1]

#### WORKSHOP: EXPLORING ONTOLOGY-BASED DESIGN INTERACTIONS FOR SUSTAINABILITY RESEARCH

11:00 - 11:40 Game and play session 2:

"Risk, Impact, Adaptation, and Mitigation Game"

Incorporating conceptual modelling and ontologies within a game

11:40 - 12:20 Game and play session 3:

"Sustainable Development Goals (SDGs) SDG5 Gender Equality and SDG4 Inclusive and Equitable Quality Education"

Exploring ontology-based discourse analysis of gameplay data

12:20 - 12:30 Activity debrief and conclusion

12:30 – 14:00 LUNCH

14:00 – 15:30 PARALLEL WORKSHOPS

[Room S1]

#### WORKSHOP: THE 1<sup>ST</sup>. INTERNATIONAL USABLE SECURITY AND PRIVACY FOR EMERGING TECHNOLOGIES WORKSHOP (ASPIRING)

14:00 -14:20 Welcome by the Organizers

14:20 -15:30 Keynote "Security: Attitude and Behavior Perspectives" by Raian Ali

[Room S2]

WORKSHOP: 2<sup>ND</sup>. INTERNATIONAL WORKSHOP ON CYBER-PHYSICAL SOCIAL SYSTEMS FOR SUSTAINABILITY

14:00 -14:10 Kick-off for CPSS4Sus

Chairs: Isabel Sofia Brito and João Paulo Barros

14:10 -14:50 Keynote “Sustainability in Agile Context” by João Araújo

14:50 -15:10 A Cyber-Physical Social System Approach for User-Centric Power Wheelchairs

*Carolina Lagartinho-Oliveira, Filipe Moutinho and Luis Gomes*

15:10 -15:30 Method and tool to assess the environmental impacts of cyber-physical systems with a life-cycle approach

*Felix Schöllhammer, Mario Cortes-Cornax, Paula Lago, Vijanti Ramautar, Claudia Roncancio, Sietse Overbeek and Sergio España*

15:30 – 16:00 COFFEE BREAK

16:00 – 17:30 PARALLEL WORKSHOPS

[Room S1]

WORKSHOP: THE 1<sup>ST</sup>. INTERNATIONAL USABLE SECURITY AND PRIVACY FOR EMERGING TECHNOLOGIES WORKSHOP (ASPIRING)

16:00 -16:25 Towards a Heuristic Model for Usable Privacy

*Mohamad Gharib*

16:25 -16:50 Usable Privacy: A Study of Norwegian Software Development Practices

*Synne Stokkevåg Berg and Katrien De Moor*

16:50 -17:10 Towards a decentralized data privacy protocol for self-sovereignty in the digital world

*Rodrigo Falcão and Arghavan Hosseinzadeh*

17:10 -17:30 Closing by the Organizers

[Room S2]

WORKSHOP: 2<sup>ND</sup>. INTERNATIONAL WORKSHOP ON CYBER-PHYSICAL SOCIAL SYSTEMS FOR SUSTAINABILITY

16:00 -17:20 Group activity - World Café

17:20 -17:30 Closing by the chairs Isabel Sofia Brito and João Paulo Barros

18:00 – 20:00 WALKING TOUR

20:00 – 22:00 CONFERENCE ICEBREAKER

## MAIN CONFERENCE

### KEYNOTE SPEAKERS

Wednesday – 15 May 2024  
09:00 – 10:30

Fabiano Dalpiaz

**Information Science Research with Large Language Models:  
between Science and Fiction**



Thursday – 16 May 2024  
09:00 – 10:30

Carlos Ribas

**The power of Information Systems shaping the future of  
Automotive Industry**



Friday – 17 May 2024  
09:00 – 10:30

Barbara Weber

**BPM in the Era of AI and Generative AI: Opportunities and  
Challenges**



## TUTORIALS

Wednesday – 15 May 2024

14:00 – 15:30

Ademar Aguiar and Neil Harrison

**Unleash the Power of Engineering Questions**



Wednesday – 15 May 2024

14:00 – 15:30

Mike Mannion and Hermann Kaind

**Comparing Products using Similarity Matching**



Thursday – 16 May 2024

16:00 – 17:30

Faiza A. Bukhsh and Maya Daneva

**How Data Analytics and Design Science Fit: a Joint Research-methodological Perspective**



Thursday – 16 May 2024

16:00 – 17:30

Jan Vanthienen

**Decision Intelligence for Enterprise and IS Engineering**



## WEDNESDAY, MAY 15

08:45 – 09:00 **RCIS 2024 OPENING** [Small Auditorium]

09:00 – 10:30 **KEYNOTE SESSION** [Small Auditorium]

CHAIR: João Araújo

Information science research with large language models: between science and fiction

FABIANO DALPIAZ

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 PARALLEL SESSIONS

### **SESSION 1** [Room S1]

#### **SUSTAINABILITY**

CHAIR: Isabel Sofia Brito

A Reference Architecture for Digital Product Passports at Batch Level to support Manufacturing Supply Chains

*Malina Wiesner, Joao Moreira, Renata Guizzardi and Paul Scholz*

The effects of class balance on the training energy consumption of logistic regression models

*Maria Gutierrez, Coral Calero, Felix Garcia and Marian Moraga*

Optimising sustainability accounting: using language models to match and merge survey indicators

*Vijanti Ramautar, Noah Rittfeld, Sjaak Brinkkemper and Sergio España*

### **SESSION 2** [Small Auditorium]

#### **REQUIREMENTS AND ARCHITECTURE**

CHAIR: Jolita Ralyté

Dealing with Emotional Requirements for Software Ecosystems: Findings and Lessons Learned in the PHArA-ON Project

*Mohamad Gharib, Mariana Falco, Femke Nijboer, Angelica M. Tinga, Stefania D'Agostini, Erika Rovini, Laura Fiorini, Filippo Cavallo and Kuldar Taveter*

A Tertiary Study on Quality in Use Evaluation of Smart Environment Applications

*Maria Paula Corrêa Angeloni, Rafael Duque Medina, Káthia Marçal de Oliveira, Emmanuelle Grislin Le-Strugeon and Cristina Tinauca*

A Reference Architecture for Dry Port Digital Twins: Preliminary Assessment Using ArchiMate

*Joana Antunes, João Barata, Paulo Rupino da Cunha, Jacinto Estima and José Tavares*

12:30 – 14:00 LUNCH

14:00 – 15:30 PARALLEL SESSIONS

### **TUTORIAL 1** [Small Auditorium]

#### **UNLEASH THE POWER OF ENGINEERING QUESTIONS**

PRESENTERS: Ademar Aguiar and Neil Harrison

## **TUTORIAL 2** [Room S1]

### **COMPARING PRODUCTS USING SIMILARITY MATCHING**

PRESENTERS: Mike Mannion and Hermann Kaind

## **DOCTORAL CONSORTIUM I** [Room S2]

CHAIR: Selmin Nurcan

MENTORS: Jolita Ralyté and Selmin Nurcan

### **Panel "Let's talk about the PhD journey" with Jolita Ralyté, Renata Guizzardi and Saïd Assar**

Strengthening cloud applications: A deep dive into kill chain identification, scoring, and automatic penetration testing

Presenter: *Stefano Simonetto*

Discussant: *Steve Ahouanmenou*

Towards a cybersecurity maturity model specific for the healthcare sector: Focus on hospitals

Presenter: *Steve Ahouanmenou*

Discussant: *Stefano Simonetto*

15:30 – 16:00 COFFEE BREAK

16:00 – 18:00 PARALLEL SESSIONS

## **SESSION 3** [Small Auditorium]

### **CONCEPTUAL MODELLING AND ONTOLOGIES**

CHAIR: Giancarlo Guizzardi

An Ontology-Driven Solution for Capturing Spatial and Temporal Dynamics in Smart Agriculture

*Laura-Maria Cornei, Doru Cornei and Cristian Foşalău*

A Knowledge Graph-based Decision Support System for Resilient Supply Chain Networks

*Wilhelm Düggelein and Emanuele Laurenzi*

A Conceptual Model of Digital Immune System to Increase the Resilience of Technology Ecosystems

*Beate Krauze and Janis Grabis*

Integrating Models of Observing and Observed Activities Based on an Example of Empirical Research in Information Systems Discipline (Journal-first)

*Iliia Bider*

## **SESSION 4** [Room S1]

### **BUSINESS PROCESS MANAGEMENT**

CHAIR: Ana Moreira

Enhancing the Accuracy of Predictors of Activity Sequences of Business Processes

*Muhammad Awais Ali, Marlon Dumas and Fredrik Milani*

Which Legal Requirements are Relevant to a Business Process? Comparing AI-driven Methods as Expert Aid

*Catherine Sai, Shazia Sadiq, Lei Han, Gianluca Demartini and Stefanie Rinderle-Ma*

Conversational Systems for AI-Augmented Business Process Management

*Casciani Angelo, Mario Luca Bernardi, Marta Cimitile and Andrea Marrella*



Design of an IoPT approach to create a cocktail robot station with robotic arm: components, interfaces and control (Journal-first)  
*Nataliia Klievstova and Marcel Fuschlberger*

**DOCTORAL CONSORTIUM II [Room S2]**

CHAIR: Selmin Nurcan

MENTORS: Renata Guizzardi and João Araújo

Improving understanding of misinformation campaigns with a two-stage methodology using semantic analysis of Fake News

Presenter: *Sidbewendin Angeliqye Yameogo*

Discussant: *Antoni Mestre*

Towards a Hybrid Intelligence Paradigm: Systematic Integration of Human and Artificial Capabilities

Presenter: *Antoni Mestre*

Discussant: *Sidbewendin Angeliqye Yameogo*

19:30 – 21:30 CONFERENCE RECEPTION

## THURSDAY, MAY 16

09:00 – 10:30 **KEYNOTE SESSION** [Small Auditorium]  
CHAIR: Maribel Yasmina Santos

*The power of Information Systems shaping the future of Automotive Industry*  
CARLOS RIBAS

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 PARALLEL SESSIONS

**SESSION 5** [Small Auditorium]  
**DATA AND PROCESS SCIENCE**  
CHAIR: Elena Kornysheva

TimeFlows: Visualizing Process Chronologies from Vast Collections of Heterogeneous Information Objects  
*Max Lonysa Muller, Erik Saaman, Jan Martijn E. M. van der Werf, Charles Jeurgens and Hajo A. Reijers*

Imposing Rules in Process Discovery: an Inductive Mining Approach  
*Ali NorouziFar, Marcus Dees and Wil van der Aalst*

An Approach for Discovering Data-driven Object Lifecycle Processes  
*Marius Breitmayer, Lisa Arnold, David Goth and Manfred Reichert*

**SESSION 6** [Room S1]  
**SECURITY**  
CHAIR: Renata Guizzardi

US4Usec: A User Story Model for Usable Security  
*Mohamad Gharib*

Do Cialdini's Persuasion Principles Influence Trust and Risk-Taking when Potential Social Engineering is Knowingly Present?  
*Amina Mollazehi, Israa Abuelezz, Mahmoud Barhamgi, Khaled M. Khan and Raian Ali*

Classifying Healthcare and Social Organisations in Cybersecurity Profiles  
*Steve Ahouanmenou, Amy Van Looy, Geert Poels, Petra Andries and Thomas Standaert*

12:30 – 14:00 LUNCH

14:00 – 15:30 PARALLEL SESSIONS

**FORUM PAPERS** [Small Auditorium and Auditorium Foyer]  
CHAIR: Jānis Grabis

Transfer Learning for Potato Leaf Disease Detection  
*Shahid Mohammad Ganie, Hemachandran K and Manjeet Rege*

Knowledge graph multilevel abstraction: A property graph reification based approach  
*Selsebil Benelhaj-Sghaier, Annabelle Gillet and Eric Leclercq*

ExpO: Towards Explaining Ontology-Driven Conceptual Models  
*Elena Romanenko, Diego Calvanese and Giancarlo Guizzardi*

Translucent Precision: Exploiting Enabling Information To Evaluate The Quality Of Process Models

*Harry Herbert Beyel and Wil van der Aalst*

IPMD: Intentional Process Model Discovery from Event Logs

*Ramona Elali, Rébecca Deneckère, Elena Kornyshova and Camille Salinesi*

Forensic-Ready Analysis Suite: A Tool Support for Forensic-Ready Software Systems Design

*Lukas Daubner, Sofija Maksovic, Raimundas Matulevicius, Barbora Buhnova and Tomas Sedlacek*

Control and Monitoring of Software Robots: What Can Academia and Industry Learn From Each Other?

*Kelly Kurowski, Antonio Martínez Rojas and Hajo A. Reijers*

Creating A Web-based Viewer for an ADOXX-based Modeling Toolkit

*Ilia Bider and Siim Langel*

Ontology-based interaction design for social-ecological systems research

*Max Willis and Greta Adamo*

Scriptless and Seamless: Leveraging Probabilistic Models for Enhanced GUI Testing in Native Android Applications

*Olivia Rodriguez Valdes, Kevin van der Vlist, Robbert van Dalen, Beatriz Marin and Tanja E. J. Vos*

Identifying Relevant Data in RDF Sources

*Zoé Chevallier, Zoubida Kedad, Béatrice Finance and Frédéric Chaillan*

Novelty-driven Evolutionary Scriptless Testing

*Lianne V. Hufkens, Tanja E. J. Vos and Beatriz Marin*

## RESEARCH PROJECTS I [Room S1]

CHAIR: Jose Luis de la Vara

LudoTrack: Web Mining, Search Technologies and Natural Language Processing for the Early Detection of Pathological Gambling

*David Losada, Nelly Condori-Fernandez, and Marcos Fernández Pichel*

Digital Twins for Haptic Design Thinking: Application within CoDEMO 5.0

*Alexander Völz, Julia Vaidian, and Christian Muck*

QualAI: Continuous Quality Improvement of AI-based Systems

*Nicole Novielli, Rocco Oliveto, Fabio Palomba, Fabio Calefato, Giuseppe Colavito, Vincenzo De Martino, Antonio Della Porta, Giannaria Giordano, Emanuela Guglielmi, Filippo Lanubile, Luigi Quaranta, Gilberto Recupito, Simone Scalabrino, Angelica Spina, and Antonio Vitale*

Ontology Based Knowledge System for Ceramic Multi-Layer Components

*Sahar Ben Hassine and Rainer Stark*

DIGILOG: Towards a Monitoring Platform for Digital Transformation of European Communities

*Jonathan Gerber, Jasmin Saxer, Bruno Kreiner, and Andreas Weiler*

Dynamic Cyber Risk Assessment for Connected Medical Devices: the NEMECYS Approach

*Gencer Erdogan, Laura Carmichael, Steve Taylor, Simeon Tverdal and Andrea Neverdal Skytterholm*

How Scenario Building supports Conceptual Modelling  
*Anna Sumereder, Damiano Falcioni, and Robert Woitsch*

Digitalization of Health and Social Care Collaboration: Identification of Problems and Solutions  
*Martin Henkel, Erik Perjons, Katarina Fast Lappalainen, Uno Fors, Paul Johannesson and Cecilia Magnusson Sjöberg*

15:30 – 16:00 COFFEE BREAK

16:00 – 17:30 PARALLEL SESSIONS

**TUTORIAL 3** [Small Auditorium]

HOW DATA ANALYTICS AND DESIGN SCIENCE FIT: A JOINT RESEARCH-METHODOLOGICAL PERSPECTIVE

PRESENTERS: Faiza A. Bukhsh and Maya Daneva

**TUTORIAL 4** [Room S1]

DECISION INTELLIGENCE FOR ENTERPRISE AND IS ENGINEERING

PRESENTER: Jan Vanthienen

**RESEARCH PROJECTS II** [Auditorium Foyer]

CHAIR: Jose Luis de la Vara

Research Projects Posters (Q&A)

20:00 – 23:00 CONFERENCE DINNER (Buses leave at 19:45. Meeting Point: Conference Venue)

## FRIDAY, MAY 17

09:00 – 10:30 **KEYNOTE SESSION** [Small Auditorium]  
CHAIR: Jose Luis de la Vara

**BPM in the Era of AI and Generative AI: Opportunities and Challenges**  
BARBARA WEBER

10:30 – 11:00 COFFEE BREAK

11:00 – 13:00 PARALLEL SESSIONS

**SESSION 7** [Small Auditorium]  
**DATA AND INFORMATION MANAGEMENT**  
CHAIR: Oscar Pastor

Unified Models for querying Distributed Data across Polystores  
*Léa El Ahdab, Imen Megdiche, André Peninou and Olivier Teste*

Enabling interdisciplinary research in Open Science: Open Science Data Network  
*Vincent-Nam Dang, Franck Ravat, Nathalie Aussenac-Gilles and Imen Megdiche*

TD-CRESTS: Top-Down Chunk Retrieval based on Entity, Section, and Topic Selection  
*Mohamed Yassine Landolsi and Lotfi Ben Romdhane*

DataFITS: A Heterogeneous Data Fusion Framework for Traffic and Incident Prediction  
(Journal-first)  
*Philipp Zibner, Paulo Rettore, Bruno Santos, Johannes Loevenich and Roberto Rigolin F. Lopes*

**SESSION 8** [ROOM S1]  
**EVALUATION AND EXPERIENCE STUDIES**  
CHAIR: Saïd Assar

Adaptive Portfolio Management based on Complexity Theory and Sociotechnical Design  
*José Antonio Ortega Barros, Oscar Pedreira and Mario Piattini*

Empathy Vs Reluctance to Challenge Misinformation: The Mediating Role of Relationship Costs, Perspective Taking, and Need for Cognition  
*Rabab Ali Abumalloh, Selin Gurgun, Muaadh Noman, Keith Phalp, Osama Halabi, Vasilis Katos and Raian Ali*

An industrial experience leveraging the iv4XR framework for BDD testing of a 3D sandbox game  
*Fernando Pastor Ricos, Beatriz Marin, Wishnu Prasetya, Tanja E. J. Vos, Joseph Davidson and Karel Hovorka*

Emotion Trajectory and Student Performance in Engineering Education: A Preliminary Study  
*Edouard Nadaud, Antoun Yaacoub, Siba Haidar, Benedicte Le Grand and Lionel Prevost*

13:00 – 13:15 **RCIS 2024 CLOSING AND PRESENTATION OF THE NEXT CONFERENCE**

13:15 – 14:30 LUNCH