

## I4CS Program Overview

### Tuesday, June 11, 2024

19:00 Informal Welcome Meeting with the Program Committee

### Wednesday, June 12, 2024

08:00 Registration  
 08:45 Conference Opening  
 09:15 **Keynote** by *Anna Wilbik*  
 "Responsibility and Explainability in Automated Systems"  
 10:15 Break  
 10:30 **Session 1:** Quantum Computing  
 12:00 Lunch Break  
 12:45 **Session 2:** Pervasive Computing  
 14:15 Tea Break  
 14:30 **Session 3:** Information Analysis  
 16:00 Community Walk and Visit of the Museum of Illusions  
 18:00 Dinner

### Thursday, June 13, 2024

08:30 **Session 4:** Graphs and Routing  
 10:00 Break  
 10:30 **Session 5:** Information Security in Supply Chains  
 Lunch Break  
 12:45 **Invited Talk** by *Klaus-Dieter Rest*  
 "Decision Support for Home Health Care Services in Urban Regions"  
 13:45 **Session 6:** Secure Applications  
 15:15 Walk to the River Side  
 15:45 Boat Boarding for Community Activity  
 19:00 Conference Dinner

### Friday, June 14, 2024

09:00 **Session 7:** Blockchain and Digital Sovereignty  
 11:00 Break  
 11:30 **Invited Talk** by *Rob van der Mei*  
 "Saving Lives with Mathematics: the Bumpy Road from Mathematical Modelling to a Successful Company"  
 12:30 Lunch Break  
 13:30 Awards / Announcement of I4CS 2025 / Closing



Boat Peer at River Maas © Phillipson

## Conference Venue

In 2024, under the motto "Crossing Digital Borders", the I4CS Steering Committee would like to invite the academic community to the city of Maastricht, a famous place for Europe, referring to the Maastricht treaties. The city is located at the banks of the River Maas and offers a medieval architecture and lively cultural scene.

The University of Maastricht (UM), which will offer the conference an excellent venue to meet, is the most international university in the Netherlands with nearly 22,000 students and 4,400 employees. UM distinguishes itself with its innovative education model, international character and multi-disciplinary approach to research and education.



## Conference Fees and Contacts

- Author Rate (maximal one paper per person) 425 €
- Student Author Rate (maximal one paper per person) 350 €
- Non-Author Rate 350 €
- Extra Proceedings' Book Copy 65 €

For your online registration, more information, and further details, please feel free to check out either:

<http://www.i4cs-conference.org/>  
<mailto:info@i4cs-conference.org>

or directly contact the program chair  
 Frank Phillipson  
 TNO ICT – Applied Cryptography & Quantum Algorithms  
 Anna van Buerenplein 1  
 NL-2595 DA The Hague  
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## 24<sup>th</sup> International Conference

# I4CS 2024 Innovations for Community Services

June 12 – 14, 2024  
 Maastricht, The Netherlands

## Conference Program

Hosted by  
 Maastricht University



TNO, Netherlands Organization for  
 Applied Scientific Research



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## Scientific Sessions in Detail

### S1: Quantum Computing (chair: Leendert W. M. Wienhofen)

Melanie van Dommelen and Frank Phillipson:

#### QUBO Formulation for Sparse Sensor Placement for Classification

Frank Phillipson:

#### Leveraging Quantum Technology to Enhance Community Services and Supportive ICT Infrastructure

Sebastian Zielinski, Magdalena Benkard, Jonas Nüßlein, Claudia Linnhoff-Popien and Sebastian Feld:

#### SATQUBOLIB: A Python Framework for Creating and Benchmarking (Max)-3SAT QUBOs

### S2: Pervasive Computing (chair: Gerald Eichler)

Wessel Kraaij, Marloes van der Klauw, Geiske Bouma and Pepijn van Empelen:

#### Better Together – Empowering Citizen Collectives with Community Learning

Lucie Schmidt, Christian Erfurth:

#### The Future of Aging at Home: A Trend Analysis of Smart Home Innovations

Sabrina Hölzer, Christian Erfurth:

#### Examining Smart Neighborhood Platforms: A Qualitative Exploration of Features and Applications

### S3: Information Analysis (chair: Christian Erfurth)

Mario M. Kubek, Shiraj Pokharel and Georg P. Roßbrucker:

#### WebMap – Large Language Model-assisted Semantic Link Induction in the Web

Patrick Seidel, Steffen Späthe:

#### Development and validation of AI-driven NLP algorithms for chatbots in Requirement Engineering

Sergej Schultenkämper and Frederik Simon Bäumer:

#### Structured Knowledge Extraction for Digital Twins: Leveraging LLMs to Analyze Tweets

### S4: Graphs and Routing (chair: Jörg Roth)

Sam Leder and Thijs Laarhoven:

#### Oblivious graph algorithms for solving TSP and VRP using FHE and MPC

Florian Blauensteiner and Günter Fahrnberger:

#### Route Optimization of an Unmanned Aerial Vehicle beyond Visual Line of Sight

Laurent Hussenet, Cherifa Boucetta and Michel Herbin:

#### Spanning Thread: A Multidimensional Classification Method for Efficient Data Center Management

### S5: Information Security in Supply Chains

(chair: Udo Krieger)

Maximilian Greiner, Judith Strussenberg, Andreas Seiler, Stefan Hofbauer, Michael Schuster, Damian Stano, Günter Fahrnberger, Stefan Schauer and Ulrike Lechner:

#### Scared? Prepared? Towards a Ransomware Incident Response Scenario

Tiang Zhao, Ulrike Lechner, Maria Pinto-Albuquerque, Tiago Gasiba and Didem Ongu:

#### COPYCAT: Applying Serious Games in Industry for Defending Supply Chain Attack

Andreas Seiler, Ulrike Lechner, Judith Strussenberg and Stefan Hofbauer:

#### Operation Raven - Design of a Cyber Security Incident Response Game

### S6: Secure Applications (chair: Ulrike Lechner)

Guntur Budi Herwanto, Gerald Quirchmayr, A Min Tjoa, Annisa Ningtyas, Diyah Putri and Anis Fuad:

#### Integrating Contextual Integrity in Privacy Requirements Engineering: A Study Case in Personal E-Health Applications

Manuel Gerwien, Marcel Großmann and Udo R. Krieger:

#### The System Architecture of a Reliable Telesurgery Service and its Performance Analysis

Marcel Großmann and Noelle Weinmann:

#### Emulation of Denial-of-Service Attacks for Software Defined Networks Accessible on Commodity Hardware with Kathara

### S7: Blockchain and Digital Sovereignty

(chair: Günter Fahrnberger)

Karl Seidenfad, Maximilian Greiner, Jan Biermann, David Dannenberg, Sven Keineke and Ulrike Lechner:

#### Greenhouse Gas Emissions as Commons: A Community Service Approach with Blockchain on the Edge

Maximilian Greiner, Karl Seidenfad, Andreas Hofmann, Christoph Langewisch and Ulrike Lechner:

#### The Digital Product Passport: Enabling Interoperable Information Flows through Blockchain Consortia for Sustainability

John Bechara and Ulrike Lechner:

#### Digital Sovereignty and Open Source Software – A Discussion Paper

Michael Hofmeier, Karl Seidenfad, Manfred Hofmeier and Wolfgang Hommel:

#### Web-based Protocol Enabling Distributed Identity Information Networks for Greater Sovereignty

## Conference Proceedings

All accepted papers are included in the proceedings published as Vol. No. 2109 in the series Communications in Computer and Information Science (CCIS) by Springer. The 24<sup>th</sup> I4CS focuses on the well-known three key areas:



**Technology:**  
Distributed Architectures and Frameworks

**Applications:**  
Communities on the Move

**Socialization:**  
Ambient Work and Living



## Chairs and Committees

### Steering Committee

#### Program Chair:

Frank Phillipson, TNO/UM, The Hague/Maastricht, The Netherlands

#### Steering Chair:

Gerald Eichler, Deutsche Telekom, Darmstadt, Germany

#### Conference Chair:

Christian Erfurth, University of Applied Sciences Jena, Germany

#### Publication Chair:

Günter Fahrnberger, University of Hagen, Germany

### Program Committee

<https://www.eah-jena.de/i4cs-conference/committees-and-chairs>

