



# The Seventh International Conference on Cyber-Technologies and Cyber-Systems

## CYBER 2022

November 13, 2022 to November 17, 2022 - Valencia, Spain

- Submit a Contribution
- Registration
- Camera Ready

Deadlines	
Submission	Jul 16, 2022
Notification	Aug 12, 2022
Registration	Aug 25, 2022
Camera ready	Aug 30, 2022

Deadlines differ for special tracks. Please consult the conference home page for special tracks Call for Papers (if any).

Past Events

Sponsors



**Publication**

Published by IARIA Press (operated by Xpert Publishing Services)

Archived in the Open Access IARIA ThinkMind Digital Library.

Prints available at Curran Associates, Inc.

Authors of selected papers will be invited to submit extended versions to a IARIA Journal Indexing Procedure



### CYBER 2022: Program

**Onsite and Online Options: In order to accommodate a large number of situations, we are offering the option for either physical presence or virtual participation (pdf slides or pre-recorded videos).**

For 2022, all events will be held in a hybrid mode with five options: on site or virtual choices (live, pre-recorded videos, voiced presentation slides, and .pdf slides).

We hope for better times allowing us to return to the traditional on site scientific events. However, we are ready to adapt any which way the conditions dictate.

**NexTech 2022 Congress**

**Conference will be mixed online and on location at**

**Holiday Inn Express Valencia-Ciudad Las Ciencias**  
Escritor Rafael Ferreres 22  
Valencia, 46013  
Spain

Note: This event is a mix of online and on site participation. All contributions are posted below; those presenting onsite have their own schedule, as a subset of the entire program.

#### Opening Welcome

#### On Site Program

#### Keynote Speeches

**K1. Intelligent Urban Air Mobility (ON SITE)**  
Prof. Dr. Ivana Semajnski, Ghent University, Belgium  
- presentation slides  
- video presentation  
- [short bio](#)

**K2. Small Data Deep Learning in AI-aided Medical Image Diagnosis (ON SITE)**  
Prof. Dr. Kenji Suzuki, Tokyo Institute of Technology, Japan  
- presentation slides  
- video presentation  
- [short bio](#)

**K4. Verification Objectives for Cybersecurity and Safety - Friend or Foe? (ON SITE)**  
Dr. CTO, Daniel Kästner, AbsInt GmbH, Germany  
- [presentation slides](#)  
- video presentation  
- [short bio](#)

**K5. Modern Technologies for Closing Farmers to Precision Agriculture (ON SITE)**  
Prof. Dr. Sandra Sendra Compte, UPV, Spain  
- [presentation slides](#)  
- video presentation  
- [short bio](#)

**K7. Challenges and Advanced Technology Solutions in Applied Health Informatics (Case studies from the Bulgaria)**  
Prof. Dr. [Dimitar Tchakatchiev](#) (Димитър Чаръкчиев), Sofia University St. Kliment Ohridsky, Bulgaria  
- [presentation slides](#)  
- [short bio for Dr. Dimitar Tchakatchiev](#)  
- [short bio for Evgeniy Krastev](#)

**K8. Model-based Code Generation for Microservice-based Automation Solutions**  
Prof. Dr. Jerker Delsing, Luleå University of Technology, Sweden  
- presentation slides  
- video presentation  
- [short bio](#)

**K9. Black swan? Or just an Ugly Duckling?**  
Anne Coull, Objective Insight and Getting of Wisdom Australia  
- [presentation slides](#)  
- [video presentation](#)  
- [short bio](#)

**K10. Wireless Sensor Networks and Remote Sensing in Coastal Zone Monitoring (ON SITE)**  
Dr. Lorena Parra Boronat, UPV, Spain  
- [presentation slides](#)  
- video presentation  
- [short bio](#)

**K11. Group-based Self-organizing Networks (ON SITE)**  
Prof. Dr. Jaime Lloret Mauri, Universitat Politècnica de Valencia, Spain  
- presentation slides  
- video presentation  
- [short bio](#)

**K12. An Emergent Cyber-Topology Attack Vector Assessment**  
Dr. Steve Chan, Decision Engineering Analysis Laboratory, USA  
- [presentation slides](#)  
- video presentation  
- [short bio](#)

#### Open discussion

**Theme: Cyber-systems Protection by Design**  
Facilitator: Prof. Dr. Petre Dini, IARIA, USA/EU

**Invitees:**  
Dr. CTO Daniel Kaestner, AbsInt GmbH, Germany  
Prof. Dr. Nader Mir, San Jose State University, USA  
Prof. Dr. Michael Massoth, Hochschule Darmstadt (h\_da), Germany

#### Special Tracks

##### DIGITAL 2022/ XAISG: Explainable AI in Societal Games

Introduction  
*Atriya Sen*  
- [presentation slides / editorial](#)

War-Gaming Needs Argument-Justified AI More Than Explainable AI  
*John Licato*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Can "Provably Beneficial AI" Save Us?  
*Selmer Bringsjord, Naveen Sundar Govindarajulu, John Licato*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Toward Marching Knowledge Acquisition in DeepRL Models  
*Anthony Marchiafava, Atriya Sen*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

##### CYBER 2022 / CYMAR: Cyber at Sea: Issues Concerning the Maritime Sector

Introduction  
*Kevin D. Jones, Kimberly Tam*  
- [presentation slides / editorial](#)

Investigating the Security and Accessibility of Voyage Data Recorder Data Using a USB Attack  
*Avanthika Vineetha Harish, Kimberly Tam, Kevin Jones*  
- [presentation slides / video / full article in Thinkmind Digital Library / voiced slides](#)

A Ship HoneyNet Project to Collect Data on Cyber Threats to the Maritime Sector  
*Stephen J McCombie, Jeroen Pijper*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Timely Maritime Cyber Threat Resolution in a Multi-Stakeholder Environment  
*Allan Nganga, Joel Scantlan, Margareta Lützhöft, Steven Mallam*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Reducing the Cyber-Attack Surface in the Maritime Sector via Individual Behaviour Change  
*Konstantinos Mersinas, Chupkemi Divine Chana*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

##### DATA ANALYTICS 2022 / TTASC: Transport and Traffic Analytics in Smart Cities

Introduction  
*Ivana Semajnski*  
- [presentation slides / editorial](#)

Overview of European Union Guidelines and Regulatory Framework for Drones in Aviation in the Context of the Introduction of Automatic and Autonomous Flight Operations in Urban Air Mobility  
*Eiharn Fakhrain, El-Houssaine Aghezzaf, Silvio Semajnski, Ivana Semajnski*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Aircraft Path Planning for UAM Applications  
*Silvio Semajnski, Ignacio Querol Puchal, Ronald Pongullo-Intriago, Ivana Semajnski*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

##### GLOBAL HEALTH 2022: Global Challenges

Introduction  
*Les Sztandera*  
- [presentation slides / editorial](#)

Health Interventions on the African Continent [PRESENTATION]  
*Les Sztandera*  
- [presentation slides / video](#)

COVID-19 Pandemic: Challenges in Eyecare Delivery in India [PRESENTATION]  
*Anthony Vipin Das, Raja Narayanan*  
- [presentation slides / video](#)

Network Analysis of a Healthcare System During the COVID-19 Pandemic [PRESENTATION]  
*Jeanne Ruane*  
- [presentation slides / video](#)

#### Regular Sessions

##### ADVCOMP 2022, The Sixteenth International Conference on Advanced Engineering Computing and Applications in Sciences

Data and Feature Engineering Challenges in Machine Learning  
*Kendall Nygard, Mostofa Ahsan, Aakanksha Rastogi, Rashmio Satyal*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

(Un)Like Schumann: Applying Cope's Music Signature Pattern Matching Algorithms to Tchaikovsky's Children's Album  
*Evgeny Pyshkin, Andrei Kuznetsov, Andrey Matveets*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

On the Proportional-Integral-Derivative Based Trading Algorithm under the Condition of the log-Normal Distribution of Stock Market Data  
*Vadim Azhmyakov, Ilya Shirakov, Yuri Dornov, Luz Adriana Guzman Trujillo*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Identification of Critical Nodes and Links in a Supply Chain by Robust Optimization  
*Tim vor der Brück, René Meier*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Towards a Semantic Model for Wise Systems - A Graph Matching Algorithm  
*Abdelhafid Dahmani, Ilham Alouci, Sébastien Morinet, Flavien Vernier*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

##### AMBIENT 2022, The Twelfth International Conference on Ambient Computing, Applications, SERVICES and Technologies

Customizability in Preventing Loss of Interest in Ambient Displays for Behavior Change  
*Shiori Kunikata, Kaori Fujinami*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

An Overview of Technology-Driven Care Solutions for Seniors in Aging Societies  
*Hani Alers, Lars Nobelen, Bret van Westing, Kiara Angelino*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

##### CYBER 2022, The Seventh International Conference on Cyber-Technologies and Cyber-Systems

Security Analysis of Embedded Systems Using Virtual Prototyping  
*Yasamin Mahmoodi, Sebastian Reiter, Alexander Vieh, Oliver Bringmann*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Mitigating Against a Succession of Hidden Failure Accelerants Involved in an Insider Threat Sequential Topology Attack on a Smart Grid  
*Steve Chan*  
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Dynamic Trust Evaluation of Evolving Cyber Physical Systems  
*Rainer Falk, Steffen Fries*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

How Good is Openly Available Code Snippets Containing Software Vulnerabilities to Train Machine Learning Algorithms?  
*Kaan Oguzhan, Tiago Espinha Gasiba, Akram Louati*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Towards Secure Content Sharing in Social Networks  
*Clara Bertolissi, Alba Martinez Anton, Romain Testud, Nicola Zannone*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Attack Path Generation Based on Attack and Penetration Testing Knowledge  
*Florian Sommer, Reiner Kriesten*  
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Security Information Quality Provided by News Sites and Twitter  
*Fyu Saeki, Kazumasa Oida*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

A Survey on Artificial Intelligence Techniques in Cybersecurity Management  
*Mercy Ejura Dapel, Mary Asante, Chijioko Dike Uba, Michael Opoku Ageman*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Sterilized Persistence Vectors (SPVs): Defense Through Deception on Windows Systems  
*Nicholas Phillips, Aisha Ali-Gombe*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Efficiency of an Artificial Intelligence-based Chatbot Support for an IT-Awareness and Cybersecurity Learning Platform  
*Domnik Fanta, Farhan Sajid, Michael Massoth, Lennart Kruck*  
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Black Swan or Just an Ugly Duckling?  
*Anne Coull*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

##### DATA ANALYTICS 2022, The Eleventh International Conference on Data Analytics

Trusting the Data Analytics Process from the Perspective of Different Stakeholders  
*Sven Gehrke, Sandra Niemz, Johannes Ruhland*  
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Shapley Values based Regional Feature Importance Measures Driving Error Analysis in Manufacturing  
*Valentin Göttisheim, Holger Ziekow, Ulf Schreier, Alexander Gerling*  
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Practices for Data Sharing: An Empirical Survey  
*Andrei Raoul Morariu, Bogdan Iancu, Jerker Björkqvist*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Using Deep Learning for Automated Tail Posture Detection of Pigs  
*Jan-Hendrik Witte, Johann Gerberding, Jorge Marx Gómez*  
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The Use of Multi-Step Markov Chains in the Characterization of English Literary Works  
*Clement Leung, Chenjie Zeng*  
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Towards Style Classification for Fashion Recommender Systems  
*René Kessler, Jorge Marx Gómez*  
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Detecting Signs of Mental Disorders on Social Networks: a Systematic Literature Review  
*Ayrtón D. R. Herculano, Glauco R. S. Gomes, Damires Y. S. Fernandes, Alex S. C. Régio*  
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Privacy Protected Identification of User Clusters in Large Organizations based on Anonymized Mattermost User and Channel Information  
*Igor Jakovljevic, Martin Pobaschnig, Christian Gütt, Andreas Wagner*  
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Twitter Sentiment Analysis: A Survey in Cricket and Bollywood  
*Nayantra Kotoky, Smriti Singhal, Anushka Sharma, Dhara Ajudia*  
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##### EMERGING 2022, The Fourteenth International Conference on Emerging Networks and Systems Intelligence

Optimal Multi-Tenant Cloud Network Latency for Inter-Device Caching  
*Nader Mir, Pranav S. Paramel, Sandeep K. Sethumadhavan*  
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Calculations of the Packet Loss Ratio in Finite-Buffer Queues  
*Andrzej Chydzinski, Blazej Adamczyk*  
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Improving a Physical Search System that Detects Even Unknown Displaced Objects Using Image Differences  
*Shin Kajihara, Masato Okazaki, Chika Oshima, Koichi Nakayama*  
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Estimation of TCP Congestion Control Algorithms by Deep Recurrent Neural Network  
*Takuya Sawada, Ryo Yamamoto, Satoshi Ohzahata, Toshihiko Kato*  
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##### GLOBAL HEALTH 2022, The Eleventh International Conference on Global Health Challenges

Evaluation of the Usability and Perception of an Intelligent Home Telecare System for High-risk Obstetric Patients: Prospective Study [PRESENTATION]  
*Sara Arango Valencia, Juan Guillermo Barriente Gomez, Ever Torres Silva, Ivan Luna Gomez, Emmanuel Sánchez Diaz, and Laura Garcia Vásquez*  
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Investigation of the Application of MediaPipe to Gait Analysis  
*Yasutaka Uchida, Tomoko Funayama, Yoshiaki Kogure*  
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Assessment of Walking Condition Using Pressure Sensors in the Floor Mat  
*Tomoko Funayama, Yasutaka Uchida, Yoshiaki Kogure*  
- [presentation slides / video / full article in Thinkmind Digital Library](#)

Estimation of Lumbar Load from Web Image Using Convolutional Neural Network for Standing Forward Bending Stationary Posture  
*Riku Nishimoto, Kyoko Shibata*  
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Building Mental Resilience through Online Interactive Learning for Students in Higher Education  
*Zi-Ying Chong, Ah-Choo Koo, Hawa Rahmat*  
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3D Flickers for Visually Evoked Potentials-based Brain Computer Interface Paradigm in Virtual Reality  
*Thibault Porsaut, Alix Gouret, Soïene LeBars*  
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The Associations of Experiencing the Covid-19 Pandemic with Religiosity and Spirituality: A Cross-Sectional Study in Czech Adults [PRESENTATION]  
*Marie Buchtova, Klara Malinakova, Lukas Novak, Anna Janu, Vit Husek, Jitse P. Van Dijk and Peter Tavel*  
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##### SEMAPP 2022, The Sixteenth International Conference on Advances in Semantic Processing

Representing Online Debates in the Context of E-Journalism  
*Elisliana Ymeralli, Giorgos Flouris, Vasilis Efthymiou, Katerina Papantoniou, Theodore Patkos, Georgios Petasis, Nikiforos Pittaras, Giannis Roussakis, Elias Tzortzakakis*  
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Towards Exchanging Wearable-PGHD with EHRs: Developing a Standardized Information Model for Wearable-Based Patient Generated Health Data  
*Abdullahi Babakar Kawu, Dympha O'Sullivan, Lucy Hederman*  
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##### UBICOMM 2022, The Sixteenth International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies

A Partitioning Model for Heterogeneous CPS from the Physical Point of View  
*Martin Richter, Theresa Werner, Matthias Werner*  
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A Fog Computing Application Using Knowledge-Based Collaborative Sensors -Noise Annoyance Monitoring and Control of a Sun Tracker Use Cases  
*Joquin Canada-Bago, Jose-Angel Fernandez-Prieto, Ulrich Birkel*  
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Smart Monitoring in Tactile Cyber-Physical Systems  
*Dmitry Korzun, Sergei Marchenkov*  
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##### DIGITAL 2022, Advances on Societal Digital Transformation

Proposal of In-house Development Model for Business System at Kagawa University  
*Satoru Yamada, Takamasa Yatani, Norifumi Suehiro, Horoki Asakimori, Yusuke Kometani, Rihito Yaegashi*  
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Information Security Policy Awareness Beliefs versus Reality in Electronic Identity Systems: A Case Study of the Ghanaian National Identity System  
*Salim Awudu, Sothos Terzis*  
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From Clear to Dark: The Social Media Platform Anonymity Continuum  
*David Kenry, Theo Lynn, Gary Sinclair*  
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#### Farewell Message

### Technical Co-Sponsors and Logistic Supporters

