

**European
Interdisciplinary
Cybersecurity
Conference –
EICC 2024**



5-6 June 2024

**Democritus University of Thrace
Xanthi, Greece**

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About EICC 2024

The European Interdisciplinary Cybersecurity Conference – EICC 2024 aims at establishing a venue for the exchange of information on cybersecurity and its many aspects between academics and practitioners in Europe.

EICC was until 2019 known as the Central European Cybersecurity Conference – CECC and has been rebranded to underscore the interdisciplinarity of the conference and broaden its reach.

EICC 2024 encourages the dialogue between computer scientists and researchers in all other fields related to cybersecurity, such as behavioral sciences, sociology, criminology, investigations and law.

Interdisciplinary contributions are especially welcome.

Committees

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Shujun Li,
University of Kent (UK)

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King's College London (UK)

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Blaž Markelj,
University of Maribor (Slovenia)

Wojciech Mazurczyk,
Warsaw University of Technology
(Poland)

Keynote Speakers

Steven Furnell

Cyber Security for SMEs - Clear, Consistent and Complete?

Cyber security is clearly an issue for organisations of all sizes and across all sectors. However, the ability to understand and deal with it can very much depend upon the size of organisation and the resources that it has available.

Small and Medium-sized Enterprises, or SMEs, are frequently highlighted as facing a particular challenge, which is typically more acute towards the smaller and micro end of the scale. At the same time, they can face fundamental difficulties to even understand the issue and what they ought to be doing about it.

Drawing upon an ongoing research project, this presentation examines the nature of information available to those SMEs that may seek to better understand and address their cyber security needs. It presents an assessment of various online sources that SMEs may identify and attempt to use for guidance, and considers the varied coverage, clarity, and completeness of the related resources.

The resulting concern is that, rather than addressing their needs, SMEs could end up more confused, stuck, or even misdirected. The discussion also draws upon the views of SMEs themselves, and the specialists that they use for further advice, as well as looking ahead to a new support route that the wider project seeks to provide.



Steven Furnell is Professor of Cyber Security in the School of Computer Science at the University of Nottingham, as well as an Adjunct Professor with Edith Cowan University in Western Australia and an Honorary Professor with Nelson Mandela University in South Africa.

His research interests include security management and culture, usability of security and privacy, and technologies for user authentication and intrusion detection. He has authored over 370 papers in refereed international journals and conference proceedings, as well as various books, book chapters, and industry reports.

Steve is the UK representative to Technical Committee 11 (security and privacy) within the International Federation for Information Processing, and a board member of the Chartered Institute of Information Security, and a member of the Steering Group for the Cyber Security Body of Knowledge (CyBOK) and the Careers and Learning Working Group within the UK Cyber Security Council.

Keynote Speakers

Christos Douligeris

Cybersecurity awareness and training: The CyberSecPro and NERO approaches

The European Union agency for cybersecurity (ENISA) has consistently advocated that the advanced cybersecurity awareness programs are the best way to educate and develop a security-first culture amongst employees on how to mitigate the impact of cyber threats and incorporate activities, resources, and training to foster a cyber security culture.

The development of these awareness programs and the associated trainings require a well-structured approach that can only be achieved by the close cooperation of Higher Education Institutions (HEIs) with companies and relevant agencies.

In this talk, we will describe an ecosystem consisting of five interrelated frameworks provisioned to offer a cybersecurity awareness program. This program, named NERO, primarily provides SMEs with a Cyber Immunity Toolkit Repository, Cyber Resilience Program, and Cyber Awareness Training via gamification and provides its modules through a user-friendly marketplace. The methodology to evaluate its effectiveness and performance in three use case demonstrations on different domains will be delineated.



Christos Douligeris, currently a professor at the department of Informatics, University of Piraeus, Greece, held positions with the Department of Electrical and Computer Engineering at the University of Miami. He was an associate member of the Hellenic Authority for Information and Communication Assurance and Privacy and the President and CEO of Hellenic Electronic Governance for Social Security SA.

Dr. Douligeris has published extensively in the networking scientific literature and he has participated in many research and development projects. He is the co-editor of a book on “Network Security” published by IEEE Press/John Wiley and he is on the editorial boards of several scientific journals as well as on the technical program committees of major international conferences.

His recent involvement in EU funded research includes Sauron which addressed the various aspects (including cyberterrorism) of security in Port information systems, CyberSec4Europe, CyberSecPro and CyberSynchrony.

His main research interests lie in the areas of communications, networking security, cybersecurity, and the use of technology in all aspects of addressing web science, data analytics, and emergency response operations.

Topics

- Cybersecurity and cyber resilience
- Cyber insurance
- Digital privacy
- Digital currency, blockchains and cybercrime
- Law, investigation, internet jurisdiction and ethics
- Child safety in the cyberspace
- Cyber forensics
- Surveillance, interception, blocking and sovereignty
- Cyber warfare
- Network security
- Critical infrastructure security
- Embedded systems security
- Business continuity and disaster recovery
- Information security governance
- Security management
- Cloud security
- Internet of things security
- Big data and cybersecurity
- Healthcare information security
- Software development security
- Cyber-physical systems security
- Adversarial machine learning
- Trust management

Special Sessions

- Digital Privacy for Industrial Applications – DP4I 2024
- Medical Device Security and Privacy – MeDSec 2024
- Complex Network Analysis for Cybersecurity – CNACYS 2024
- Federated Learning Applications in the Real World – FLARW 2024
- Advances in Interdisciplinary Cybersecurity:
Insights from Funded Research Projects – CyFRP 2024

WEDNESDAY 05 JUNE 2024

09.30 - 09.45 Opening

09.45 - 10.45 Keynote

10.45 - 11.15 Coffee Break

11.15 - 12.35 Session 1A: Regulation and Compliance
Auditorium

- Understanding the Evolution of Transatlantic Data Privacy Regimes: Ideas, Interests, and Institutions

[Xinchuchu Gao and Xuechen Chen](#)

- Emergent Needs in Assuring Security-Relevant Compliance of Information Systems

[Tomas Bueno Momcilovic and Dian Balta](#)

- Towards Customized Cyber Exercises using a Process-based Lifecycle Model

[Tobias Pfaller, Florian Skopik, Paul Smith and Maria Leitner](#)

- Security-by-design Challenges for Medical Device Manufacturers

[Karin Bernsmed and Martin Gilje Jaatun](#)

Session 1B: Machine Learning and Security

Room A

- Evaluating the Impact of Conventional Code Analysis Against Large Language Models in API Vulnerability Detection

[Recep Yıldırım, Kerem Aydın and Orçun Çetin](#)

- XAI-driven Adversarial Attacks on Network Intrusion Detectors

[Satoshi Okada, Houda Jmila, Kunio Akashi, Takuho Mitsunaga, Yuji Sekiya, Hideki Takase, Gregory Blanc and Hiroshi Nakamura](#)

- Increasing the Detection Rate for Imbalanced Malicious Traffic using Generative Adversarial Networks

[Pascal Memmesheimer, Stefan Machmeier and Vincent Heuveline](#)

12.35 - 13.45 Lunch Break

13.45 - 15.30 Session 2: Best Papers

Auditorium

Voting Instructions

- Helpful or Harmful? Exploring the Efficacy of Large Language Models for Online Grooming Prevention

Ellie Prosser and Matthew Edwards

- Haven't we met before? Detecting Device Fingerprinting Activity on Android Apps

Kris Heid and Jens Heider

- can-sleuth: Investigating and Evaluating Automotive Intrusion Detection Datasets

Brooke Kidmose and Weizhi Meng

- SFTC: Machine Unlearning via Selective Fine-tuning and Targeted Confusion

Vasileios Perifanis, Efstathios Karypidis, Nikos Komodakis and Pavlos Efraimidis

15.30 - 16.00 Coffee Break

16.00 - 17.00 Session 3A: Anomaly Detection and Attack Surfaces

Auditorium

- Insights into Anomaly-based Intrusion Detection Systems Usability. A Case Study Using Real HTTP Requests

Jesús Díaz-Verdejo, Rafael Estepa, Antonio Estepa Alonso and Javier Muñoz-Calle

- Attack Surface Measurement: A Weird Machines Perspective

Matthew Levy and Froylan Maldonado

- Modelling Indicators of Behaviour for Cyber Threat Hunting via symon

Robert Chetwyn, Martin Eian and Audun Jøsang

Session 3B: User-Centric Privacy and Security

Room A

- Towards Arbitrating in a Dispute: On Responsible Usage of Client-side Perceptual Hashing Against Illegal Content Distribution

[Leon Twenning and Harald Baier](#)

- Towards Improving Accountability in Sensitive-Disclosure Scenarios

[Roman Matzutt and Eric Wagner](#)

- Survey and Analysis of User Perceptions of Security Icons

[Rei Yamagishi and Shota Fujii](#)

17.00 - 17.30 Best Paper Award Ceremony

18.30 Xanthi Old Town Tour

20.00 Dinner

THURSDAY 06 JUNE 2024

09.30 - 10.30 Keynote

10.30 - 11.30 Session 4: Forensics, Threat Intelligence and Disinformation
Auditorium

- Analysis of Security Mechanisms of Dark Web Markets

[Yichao Wang](#), [Budi Arief](#) and [Julio Hernandez-Castro](#)

- Honeypot's Best Friend? Investigating ChatGPT's Ability to Evaluate Honeypot Logs

[Meryem Berfin Ozkok](#), [Baturay Birinci](#), [Orcun Cetin](#), [Budi Arief](#) and [Julio Hernandez-Castro](#)

- Disinformation Detection and Source Tracking Using Semi-fragile Watermarking and Blockchain

[Tanya Koohpayeh Araghi](#), [David Megias](#), [Victor Garcia Font](#), [Minoru Kuribayashi](#) and [Wojciech Mazurczyk](#)

11.30 - 12.00 Coffee Break

12.00 - 13.20 Session 5: Federated Learning
Auditorium

- Incentivising the Federation: Gradient-based Metrics for Data Selection and Valuation in Private Decentralised Training

[Dmitrii Usynin](#), [Daniel Rueckert](#) and [Georgios Kaissis](#)

- An Enhanced Combinatorial Contextual Neural Bandit Approach for Client Selection in Federated Learning

[Xiangyu Ma](#), [Wei Shi](#) and [Junfeng Wen](#)

- Using Federated Learning and Channel State Information Based Sensing for Scalable and Realistic At-Home Healthcare

[Jeroen Klein Brinke](#), [Martijn van der Linden](#) and [Paul Havinga](#)

- A Federated Explainable AI Model for Breast Cancer Classification

[Eleni Briola](#), [Christos Chrysanthos Nikolaidis](#), [Vasileios Perifanis](#), [Nikolaos Pavlidis](#) and [Pavlos Efrimidis](#)

13.20 - 14.30 Lunch Break

- 14.30 - 15.30** Session 6: Privacy and Ransomware
Auditorium
- PMMP – PQC Migration Management Process
Nils von Nethen, Alexander Wiesmaier, Nouri Alnahawi and Johanna Henrich
 - Emerging Technologies for Privacy Preservation in Energy Systems
Umit Cali, Sri Nikhil Gupta Gourisetti, David Jonathan Sebastian-Cardenas, Ferhat Ozgur Catak, Annabelle Lee, Linda M. Zeger, Taha Selim Ustun, Marthe Fogstad Dynge, Sreedhar Rao and Javier E Ramirez
 - A Threat-Led Approach to Mitigating Ransomware Attacks: Insights from a Comprehensive Analysis of the Ransomware Ecosystem
Alexander Lawall and Petra Beenken

- 15.30 - 16.30** Coffee Break & Poster Session
ePosters Area
- A Hypergraph-based Model for Cyberincident Related Data Analysis
Juan Manuel Matalobos Veiga, Criado Regino Herrero, Miguel Romance del Río, Sergio Iglesias Pérez, Alberto Partida Rodríguez and Karan Kabur Hanumanthappa Manjunatha
 - Biblio-US17: A Labeled Real URL Dataset for Anomaly-based Intrusion Detection Systems Development
Jesús Díaz-Verdejo, Rafael Estepa, Antonio Estepa Alonso, Javier Muñoz-Calle and Germán Madinabeitia
 - Towards Access Control for Machine Learning Embeddings
Roman Matzutt
 - Cybersecurity Competence of Older Adult Users of Mobile Devices
Simon Vrhovec, Igor Bernik, Damjan Fujs and Damjan Vavpotič

- 16.30** Conference Closing

Social Program

Wednesday 05 June 2024

Walking tour at the old town & welcome dinner:

Schedule

- **18.00:** Bus departure from the conference venue to the central square of Xanthi (Demokratias Square) at the Xanthi Clock Tower
- **18.30:** A walking tour of the Old Town begins
- **20.00:** Welcome dinner at Pirounies Restaurant

Friday 07 June 2024

Wine tasting & tour at the ancient Avdira

Extend your stay in beautiful Xanthi and experience a unique wine tasting at Vourvoukeli's winery, followed by a tour of ancient Avdira.

Schedule

- **09.30:** Bus departure from the central square of Xanthi (Military Officers' Club of Xanthi side)
- **10.00:** Wine tasting at Vourvoukeli's winery
- **11.00:** Tour of Avdira begins
- **13.00:** Return to Xanthi

Transportation

A bus will be provided to transport participants from Xanthi to Avdira and back. The bus will depart from the central square of Xanthi at 09:30 and return at approximately 13:00.

A bus will be provided to transport participants from Xanthi to the conference and back.

On 05/06/2024 the bus will depart from the central square of Xanthi at 08:30 and return at approximately 18:00.

On 06/06/2024 the bus will depart from the central square of Xanthi at 09:00 and return at approximately 17:00.



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