

ESORICS

ESORICS 2020 Workshops

Workshops Program (online event)

17-18 September 2020
Guildford, United Kingdom

Edited by ESORICS 2020 Workshop Chair

Mark Manulis
Surrey Centre for Cyber Security
University of Surrey

Organized by



Sponsors



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To be finalised on Monday, 14 September 2020

Disclaimer

This program book aggregates contents received from the organisers of workshops affiliated with ESORICS 2020, as listed on the conference website: <https://www.surrey.ac.uk/esorics-2020/workshops>

Each workshop's program includes links to 1-min Youtube videos where speakers introduce their papers; for some papers links might be missing. Presentations of workshop papers will be given live according to the schedule published in this book. **Time zones: United Kingdom (BST)**. Each workshop will have a dedicated Zoom Webinar link. Some workshops have shared sessions as indicated on the overall schedule. A shared session will be accessible from the webinar of one of the workshops; which workshop will be streaming a shared session is visible from their programs.

Links to Zoom Webinars for all workshops will be made available to registered ESORICS 2020 participants via Slack and are therefore not included into this programme book.

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Overview All Workshops – Thursday, 17th September 2020

Time (UK)	STM	CBT	DPM	STAST	SECPRE	CyberICPS	DeSECSys	MSTEC		
09:00 - 09:15	Welcome	Welcome		Welcome	Welcome			Welcome		
09:15 - 09:30	Session 1	Keynote 1		Session 1	Keynote			Session 1		
09:30 - 09:45										
09:45 - 10:00										
10:00 - 10:15				Welcome						
10:15 - 10:30		Break		Break				Session 2		
10:30 - 10:45				Keynote	Keynote 1					
10:45 - 11:00	Keynote 1				Break					
11:00 - 11:15				Session 1						
11:15 - 11:30		Session 1	Session 1	Break						
11:30 - 11:45						Session 1		Session 3		
11:45 - 12:00	Session 2			Session 2						
12:00 - 12:15										
12:15 - 12:30									Panel	
12:30 - 13:30	Break									
13:30 - 13:45		Session 2	Session 2	Session 3	Session 2		Keynote 2	Session 4		
13:45 - 14:00										
14:00 - 14:15										
14:15 - 14:30						Break				
14:30 - 14:45				Session 4	Keynote 3		Session 5			
14:45 - 15:00										
15:00 - 15:15		Break								
15:15 - 15:30						Keynote 4				
15:30 - 15:45		Session 3	Session 3	Break	Session 3		Panel			
15:45 - 16:00									Break	
16:00 - 16:15										
16:15 - 16:30						Session 5	Session 2			
16:30 - 16:45										
16:45 - 17:00				Closing			Closing			

Overview All Workshops – Friday, 18th September 2020

Time (UK)	STM	CBT	DPM	ETAA	SPOSE	ADIoT	DETIPS	MPS	CPS4CIP
09:00 - 09:15		Keynote 2		Session 1	Welcome	Welcome	Welcome		Welcome
09:15 - 09:30	Keynote 2				Keynote 2	Keynote			
09:30 - 09:45					Session 1	Session 1	Session 1		Session 1
09:45 - 10:00				Session 1					
10:00 - 10:15	Session 3	Break		Break	Break		Break		Break
10:15 - 10:30									
10:30 - 10:45		Session 4		Session 2	Session 2		Session 2		Session 2
10:45 - 11:00	Closing								
11:00 - 11:15									Break
11:15 - 11:30									Session 3
11:30 - 11:45									Session 3
11:45 - 12:00									Session 3
12:00 - 12:15									Session 3
12:15 - 12:30									Session 3
12:30 - 13:30	Break								
13:30 - 13:45		Panel		Break				Welcome	Keynote 2
13:45 - 14:00									
14:00 - 14:15				Session 3				Keynote 1	Session 4
14:15 - 14:30									
14:30 - 14:45								Keynote 2	Break
14:45 - 15:00									
15:00 - 15:15		Farewell						Break	Session 5
15:15 - 15:30									
15:30 - 15:45								Session 1	Closing & Planning
15:45 - 16:00									
16:00 - 16:15									
16:15 - 16:30									
16:30 - 16:45									
16:45 - 17:00									

STM: 16th International Workshop on Security and Trust Management

Workshop website: <https://www.iit.cnr.it/stm2020/>

Thursday, 17th September 2020

09:00 – 09:15

WELCOME

Workshop chairs: Kostantinos Markantonakis and Marinella Petrocchi

09:15 – 10:45

SESSION 1: Security Properties and Attacks

- 09:15 – 09:45: Modelling of 802.11 4-Way Handshake Attacks and Analysis of Security Properties
Abstract video link: <https://youtu.be/LmYkC2q-PVk>
Rajiv Ranjan Singh, Jose Moreira, Tom Chothia and Mark D. Ryan
- 09:45 – 10:15: Reducing the Forensic Footprint with Android Accessibility Attacks
Abstract video link: <https://youtu.be/LJq5hsfCDX8>
Yonas Leguesse, Mark Vella, Christian Colombo and Julio Hernandez-Castro
- 10:15 – 10:45: A Novel Machine Learning Methodology for Detecting Phishing Attacks in Real Time
Abstract video link: <https://youtu.be/cAUlqgXdnXg>
Vishal Arora and Manoj Misra

10:45 – 11:30

KEYNOTE 1

Title: Identifying Vulnerabilities of Machine Learning Assets

Speaker: *[Ernesto Damiani](#)*

Abstract: Machine Learning (ML) is having a significant impact on computer security: on the one hand, ML can be used to build defensive systems such as malware and network attack detection; on the other hand, ML data and models are increasingly targeted by effective attacks. Identifying and alleviating threats to ML data assets is therefore essential. The main purpose of this talk is to discuss from the point of view of the security practitioner the foundations and the open issues toward a methodology for identifying threats and vulnerabilities of ML models, based on ML-specific definitions of CIA3-R security properties. We also discuss the idea of using Distributed Ledger Technology (DLT) to support a security control framework for countering such threats, making changing ML inference results or stealing ML data less attractive for attackers.

11:30 – 12:30

SESSION 2: Confidentiality Schema

- 11:30 – 12:00: Revocable Access to Encrypted Message Boards
Abstract video link: <https://youtu.be/U76Fq4logT0>
Fabian Schillinger and Christian Schindelhauer
- 12:00 – 12:30: Establishing Secure Communication Channels Using Remote Attestation With TPM 2.0
Abstract video link: <https://youtu.be/q1mG-kyHZWg>
Paul Georg Wagner, Pascal Birnstill and Jürgen Beyerer

Friday, 18th September 2020

09:15 – 10:00

KEYNOTE 2: STM PhD Award Talk

Title: Computational and Symbolic Analysis of Distance-Bounding Protocols

Speaker: *Jorge Luis Toro Pozo*

10:00 – 11:30

SESSION 3: Security Processes

- 10:00 – 10:30: Improved Feature Engineering for Free-Text Keystroke Dynamics
Abstract video link: <https://youtu.be/lc43lFZQzH0>
Eden Abadi and Itay Hazan
- 10:30 – 11:00: Subversion-Resistant Commitment Schemes: Definitions and Constructions
Abstract video link: <https://youtu.be/3U0kOOYek5o>
Karim Baghery
- 11:00 – 11:30: Challenges in IT Security Processes and Solution Approaches with Process Mining
Abstract video link: <https://youtu.be/KKyJ7GinyPc>
Aynseh Sundararaj, Silvia Knittl and Jens Grossklags

Thursday, 17th September 2020

09:00 – 10:15

WELCOME & KEYNOTE 1 (joint with DPM, use Webinar of CBT)

Workshop chairs (Jordi Herrera-Joancomartí & Joaquin Garcia-Alfaro)

Title: Design tradeoffs for Bitcoin Watchtowers

Speaker: *Sergi Delgado*, @Talaia Labs

10:15 – 10:30

BREAK

10:30 – 12:40

SESSION 1: Transactions, Mining & Second Layer

- 10:30-11:00 TxChain: Efficient Cryptocurrency Light Clients via Contingent Transaction Aggregation
Abstract video link: <https://youtu.be/CR34go3jN8U>
Alexei Zamyatin, Zeta Avarikioti, Daniel Perez and William J. Knottenbelt
- 11:00-11:30 VRF-Based Mining: Simple Non-Outsourceable Cryptocurrency Mining
Abstract video link: <https://youtu.be/CKWRvCs8xsQ>
Runchao Han, Haoyu Lin and Jiangshan Yu
- 11:30-12:00 On the selection of the LN client implementation parameters
Abstract video link: <https://youtu.be/5vu2oYxWqdw>
Luis Esteban Oleas Chavez, Jordi Herrera and Cristina Pérez-Solà
- 12:00-12:20 Fundamental Properties of the Layer Below a Payment Channel Network
(Short Paper) Abstract video link: <https://youtu.be/y-QF-LoeczE>
Matthias Grundmann and Hannes Hartenstein
- 12:20-12:40 ZeroJoin: Combining ZeroCoin and CoinJoin
(Short Paper) Abstract video link: <https://youtu.be/FxhIMVmgrig>
Alexander Chepurnoy and Amitabh Saxena

12:40 – 13:30

BREAK

13:30 – 15:00

SESSION 2: Signature Schemes & Formal Methods

- 13:30-14:00 Triptych: logarithmic-sized linkable ring signatures with applications
Abstract video link: <https://youtu.be/qGKUk35jbVU>
Sarang Noether and Brandon Goodell
- 14:00-14:30 Moderated Redactable Blockchains: A Definitional Framework with an Efficient Construct
Abstract video link: <https://youtu.be/yF5wfxHSZJM>
Mohammad Sadeq Dousti and Alptekin Küpçü
- 14:30-15:00 Radium: Improving Dynamic PoW Targeting
Abstract video link: <https://youtu.be/ZlILrfQcvhY>
George Bissias

15:00 – 15:30

BREAK

15:30 – 17:30

SESSION 3: Privacy, SNARKs & Anonymity

- 15:30-16:00 Proof of No-Work: How to Incentivize Individuals to Stay at Home
Abstract video link: <https://youtu.be/XapibI-la-4>
Michael Bartholic, Jianan Su, Ryosuke Ushida, Yusuke Ikeno, Zhengrong Gu and Shinichiro Matsuo
- 16:00-16:30 Privacy Preserving Netting Protocol for Inter-bank Payments
Abstract video link: https://youtu.be/4O_TPhRUQ8c
Hisham Galal and Amr Youssef
- 16:30-16:50 Who let the DOGS out: a Group Signature scheme with Distributed Opening for Auditable but Anonymous communications
(Short Paper) Abstract video link: <https://youtu.be/7ITWAZizs5Y>
Marina Dehez-Clementi, Jean-Christophe Deneuille, Jérôme Lacan, Hassan Asghar and Dali Kaafar
- 16:50-17:10 Tracking Mixed Bitcoins
(Short Paper) Abstract video link: <https://youtu.be/qOBYS2rKYwY>
Tin Tironsakkul, Manuel Maarek, Andrea Eross and Mike Just

Friday, 18th September 2020

09:00 – 10:00

KEYNOTE 2 (joint with DPM, use Webinar of DPM)

Title: Is Website Fingerprinting Actually Practical?

Speaker: *Marc Juarez* (University of Southern California).

10:00 – 10:30

BREAK

10:30 – 12:30

SESSION 4: AI, Engineering & Authentication (joint with DPM, use Webinar of DPM)

- 10:30-11:00 Extracting speech from motion-sensitive sensors
Abstract video link: <https://youtu.be/WLPiONkwL38>
Safaa Azzakhnini and Ralf C. Staudemeyer
- 11:00-11:30 A Lightweight Approach for the Elicitation of Privacy and Data Protection Requirements
Abstract video link: <https://youtu.be/HdqqBa-VqWo>
Nicolás E. Díaz Ferreyra, Patrick Tessier, Gabriel Pedroza and Maritta Heisel
- 11:30-12:00 Towards Multiple Pattern type Privacy Protection in Complex Event Processing
Abstract video link: <https://youtu.be/XopvpbdYYg>
Saravana Murthy Palanisamy
- 12:00-12:30 GPS-based Behavioral Authentication Utilizing Distance Coherence
Abstract video link: <https://youtu.be/SgMHRv5Jx-Q>
Tran Phuong Thao and Rie Shigetomi Yamaguchi

12:30 – 13:30
BREAK

13:30 – 15:00

PANEL (joint with DPM, use Webinar of DPM)

- **Title:** How cryptocurrency and blockchain technology will become a trust foundation for the New Normal while ensuring data privacy management?

Panel Moderator: Shin'ichiro Matsuo (Georgetown University)

Panelists: *Pindar Wong (VeriFi limited)*

Nat Sakimura (OpenID foundation)

Julien Bringer (Convenor of ISO TC307/WG2)

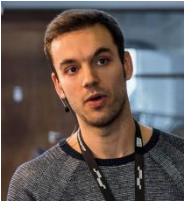
Florian Kammüller (Middlesex University London)

Patrick McCorry (PISA Research)

15:00 – 15:10

CLOSING (joint with DPM, use Webinar of DPM)

KEYNOTE 1 TALK (check DPM program for KEYNOTE 2 TALK)



Sergi Delgado is the CEO of Talaia Labs. He got his PhD in CS from the Autonomous University of Barcelona (UAB) focusing on Bitcoin and Distributed Systems. In the past he has worked in the blockchain laboratories at both UCL and UIUC. He co-founded and led the Bitcoin development at PISAResearch. His recent research has focused on measuring (and inferring) the Bitcoin peer-to-peer network which was presented at Financial Cryptography (18 & 19) and Scaling Bitcoin (18 & 19). He is currently building a watchtower protocol for Bitcoin.

Title: Design tradeoffs for Bitcoin Watchtowers

Abstract: Bitcoin layer 2 protocols, such as the Lightning Network, introduce some additional assumptions to the security model of the system. One of the most important ones is the always-online assumptions, meaning that the nodes of the network require to remain always online (or at least reconnect periodically) in order to prevent potential loss of funds. Watchtowers were introduced to reduce that assumption, acting as non-trusted, non-custodial third party relayers. While this is generally the case, some protocols may do with less strict requirements. In this talk we will cover the different tradeoffs in watchtower design, ranging from storage requirements to privacy concerns.

DPM: 15th International Workshop on Data Privacy Management

Workshop website: <https://deic-web.uab.cat/conferences/dpm/dpm2020/>

Thursday, 17th September 2020

09:00 – 10:15

WELCOME & KEYNOTE 1 (joint with CBT, use Webinar of CBT)

Workshop chairs (Guillermo Navarro & Joaquin Garcia-Alfaro)

Title: Design tradeoffs for Bitcoin Watchtowers

Speaker: *Sergi Delgado*, @Talaia Labs

10:15 – 10:30

BREAK

10:30 – 12:40

SESSION 1: Fairness, Differential Privacy & Scalability

- 10:30-11:00 Fairness-Aware Privacy-Preserving Record Linkage

Abstract video link: <https://youtu.be/CIFHUdly5e4>

Dinusha Vatsalan, Joyce Yu, Wilko Henecka and Brian Thorne

- 11:00-11:30 Differential-Private Profiling of Anonymized Customer Purchase Records

Abstract video link: <https://youtu.be/y7XpmFK-aJ8>

Hiroaki Kikuchi

- 11:30-12:00 P-Signature-based Blocking to Improve the Scalability of Privacy-Preserving Record Linkage

Abstract video link: <https://youtu.be/9qveSxn-HNs>

Dinusha Vatsalan, Joyce Yu, Brian Thorne and Wilko Henecka

- 12:00-12:20 Integrating the data protection impact assessment into the software development lifecycle

(Short Paper). Abstract video link: <https://youtu.be/s3GSW9pd0lc>

Christopher Irvine, Dharini Balasubramaniam and Tristan Henderson

- 12:20-12:40 Citizens as Data Donors: Maximizing Participation through Privacy Assurance (Short Paper) Abstract video link: <https://youtu.be/AnHm1zoY9FU>

Mohamad Gharib

12:40 – 13:30

BREAK

13:30 – 15:00

SESSION 2: Utility, Diversity & Leakage Resistance

- 13:30-14:00 Utility Promises of Self-Organising Maps in Privacy Preserving Data Mining

Abstract video link: <https://youtu.be/czGS4Sqralg>

Kabiru Mohammed, Aladdin Ayesh and Eerke Boiten

- 14:00-14:30 Multi-criteria Optimization Using l-diversity and t-closeness for k-anonymization

Abstract video link: <https://youtu.be/yuMIDbHxoaY>

Clémence Mauger, Gael Le Mahec and Gilles Dequen

- 14:30-15:00 ArchiveSafe: Mass-Leakage-Resistant Storage from Proof-of-Work
Abstract video link: <https://youtu.be/cKJcJ7rLdhA>
Moe Sabry, Reza Samavi and Douglas Stebila

15:00 – 15:30
BREAK

15:30 – 17:30

SESSION 3: Obfuscation, Contact Tracing & Privacy Loss

- 15:30-16:00 Joint Obfuscation for Privacy Protection in Location-Based Social Networks
Abstract video link: <https://youtu.be/DRO06gP85Cg>
Behnaz Bostanipour and George Theodorakopoulos
- 16:00-16:30 Modeling and analyzing the Corona-virus warning app with the Isabelle framework
Abstract video link: <https://youtu.be/SdGjqOYixwQ>
Florian KammueLLer and Bianca Lutz
- 16:30-16:50 Tracking the Invisible: Privacy-Preserving Contact Tracing to Control the Spread of a Virus (Short Paper) Abstract video link: <https://youtu.be/kWRaQ75HcBU>
Didem Demirag and Erman Ayday
- 16:50-17:10 Privacy Policy Classification with XLNet (Short Paper) Abstract video link: <https://youtu.be/4CZi6cHbVyk>
Majd Mustapha, Katsiaryna Krasnashchok, Anas Al Bassit and Sabri Skhiri
- 17:10-17:30 Every Query Counts: Analyzing the Privacy Loss of Exploratory Data Analyses (Short Paper) Abstract video link: <https://youtu.be/xrJH8a6BmX4>
Saskia Nuñez von Voigt, Mira Pauli, Johanna Reichert and Florian Tschorsch

Friday, 18th September 2020

09:00 – 10:00

KEYNOTE 2 (joint with CBT, use Webinar of DPM)

Title: Is Website Fingerprinting Actually Practical?

Speaker: *Marc Juarez*, (University of Southern California).

10:00 – 10:30
BREAK

10:30 – 12:30

SESSION 4: AI, Engineering & Authentication

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Abstract video link: <https://youtu.be/WLPiONkwL38>
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Abstract video link: <https://youtu.be/HdqqBa-VqWo>
Nicolás E. Díaz Ferreyra, Patrick Tessier, Gabriel Pedroza and Maritta Heisel

- 11:30-12:00 Towards Multiple Pattern type Privacy Protection in Complex Event Processing
Abstract video link: <https://youtu.be/XopvpbdYYg>
Saravana Murthy Palanisamy
- 12:00-12:30 GPS-based Behavioral Authentication Utilizing Distance Coherence
Abstract video link: <https://youtu.be/SgMHRv5Jx-Q>
Tran Phuong Thao and Rie Shigetomi Yamaguchi

12:30 – 13:30
BREAK

13:30 – 15:00

PANEL (joint with CBT, use Webinar of DPM)

- **Title:** How cryptocurrency and blockchain technology will become a trust foundation for the New Normal while ensuring data privacy management?
Panel Moderator: Shin'ichiro Matsuo (Georgetown University)
Panelists: *Pindar Wong (VeriFi limited)*
Nat Sakimura (OpenID foundation)
Julien Bringer (Convenor of ISO TC307/WG2)
Florian Kammuehler (Middlesex University London)
Patrick McCorry (PISA Research)

15:00 – 15:10

CLOSING (joint with CBT, use Webinar of DPM)

KEYNOTE 2 TALK (check CBT Program for KEYNOTE 1 TALK)



Marc obtained his PhD in 2019 from the University of Leuven, Belgium. During his PhD he studied traffic analysis attacks and protocols that are resistant to it, with a focus on website fingerprinting attacks. He has also worked on censorship circumvention, privacy web search, and tracking in the web. Since October 2019, he is a Postdoc researcher in the University of Southern California where he is working on problems related to algorithmic bias and algorithmic fairness.

Title: Is Website Fingerprinting Actually Practical?

Abstract: Website fingerprinting is a traffic analysis technique that allows a local eavesdropper to learn information about the web pages visited over an encrypted channel. For the past two decades, the evaluations of website fingerprinting attacks presented in the academic literature have shown an ever-increasing accuracy. The consequences of such results, if they were to hold in practice, are alarming because they imply diminished privacy guarantees for web encryption protocols such as TLS and anonymity networks such as Tor. In the research community, there is a tension between works that show that the attacks are devastating, and others that show that such claims are inflated and that minimal defenses are required. In this talk, we will go through the dialogue between these two sides of the field and discuss the actual threat that website fingerprinting attacks pose to the privacy of web user.

STAST: 10th International Workshop on Socio-Technical Aspects in Security

Workshop website: <https://stast.uni.lu/>

Thursday, 17th September 2020

09:00 – 09:15

WELCOME

Workshop chairs

09:15 – 10:15

SESSION 1: Personality and Behavior

- How can Personality influence Perception on Security of Context-aware applications?
Abstract video link: <https://youtu.be/KX2NwUfLAUk>
Nelly Condori-Fernández, Franci Suni-Lopez, Denisse Muñante and Maya Daneva
- Refining the Blunt Instruments of Cybersecurity: A Framework to Coordinate Prevention and Preservation of Behaviours
Abstract video link: <https://youtu.be/ztUI246h60s>
Simon Parkin and Yi Ting Chua

10:30 – 11:15

KEYNOTE

Titel: Dysfunctional relationships in security – and how to move beyond them

Speaker: Angela Sasse

11:30 – 12:30

SESSION 2: Behavior in Face of Adversaries

- Natural Strategic Abilities in Voting Protocols
Abstract video link: <https://youtu.be/0Ln-TDeMFQg>
Wojtek Jamroga, Damian Kurpiewski and Vadim Malvone
- A Study of Targeted Telephone Scams Involving Live Attackers
Abstract video link: <https://youtu.be/Q1-MmbUnkrE>
Ali Derakhshan, Ian Harris and Marcel Carlsson

13:30 – 14:15

SESSION 3: Smart Environments

- User Privacy Concerns and Preferences in Smart Buildings
Abstract video link: <https://youtu.be/iIWGA6sqRwI>
Scott Harper, Maryam Mehrnezhad and John Mace
- Towards Usable Updates for Smart Home Devices (Work in Progress)
Abstract video link: <https://youtu.be/b6a5VL-gqsk>
Julie Haney and Susanne Furman

14:30 – 15:45

SESSION 4: Decentralized Systems and Digital Ledgers

- WARChain: Blockchain-based validation of web archives
Abstract video link: <https://youtu.be/3hOMhaLfxHI>
Imre Lendák, Balázs Indig and Gábor Palkó

- Cyber 9/11 Will Not Take Place: A User Perspective of Bitcoin and Cryptocurrencies from Underground and Dark Net Forums
Abstract video link: <https://youtu.be/ZejZXE0Yw0A>
Simon Butler
- Self-Governing Public Decentralised Systems (Work in Progress)
Abstract video link: https://youtu.be/nkJ_uIDR9-U
Moritz Platt and Peter McBurney

16:00 – 16:45

SESSION 5: Reflections on Socio-Technical Aspects of Security

- Statistical Reliability of 10 Years of Cyber Security User Studies
Abstract video link: <https://youtu.be/D3NxrEDb0g>
Thomas Groß
- Towards Usable Updates for Smart Home Devices (Work in Progress)
Abstract video link: <https://youtu.be/zH92YbqFmc0>
Diego Sempreboni and Luca Viganò

16:45 – 17:00

CLOSING

Workshop chairs

DeSECSys: 1st Workshop on Dependability and Safety of Emerging Cloud and Fog Systems

Workshop website: <https://desecsys.futuretpm.eu/>

Thursday, 17th September 2020

10:00 – 10:15

WELCOME

Workshop chairs

10:15 – 11:00

KEYNOTE 1

Title: TBA

Speaker: TBA (Huawei)

11:00 – 12:30

SESSION 1: Trustworthy Computing

- ICITPM: Integrity Validation of Software in Iterative Continuous Integration Through the Use of Trusted Platform Modules (TPMs)

Abstract video link: <https://youtu.be/tU0Td-jSXPE>

Antonio Munoz, Aristeidis Farao, Jordy Ryan Casas, Christos Xenakis

- CloudVaults: Integrating Trust Extensions into System Integrity Verification for Cloud-based Environment

Abstract video link: <https://www.youtube.com/watch?v=HDLGb2V-Z7M>

Benjamin Larsen, Heini Bergsson, Thanassis Giannetsos

12:30 – 13:30

BREAK

13:30 – 14:15

KEYNOTE 2

Title: TBA

Speaker: *Nikolaos Laoutaris*

14:15 – 15:45

SESSION 2: Vulnerability Management and Security Analysis

- Making Picnic Feasible for Embedded Devices

Abstract video link: TBA

Johannes Winkler

- Sandboxing the Cyberspace for Cybersecurity Education and Learning

Abstract video link: https://www.youtube.com/watch?v=36_VLKdmeNA

Stylianos Karagiannis, Emmanouil Magkos, Christoforos Ntantogian, Luis Landeiro Ribeiro

15:45 – 16:00

BREAK

16:00 – 16:45

SESSION 3: Cyber Security EU-funded Projects

- ASTRID – AddreSsing Threats for virtuallseD Services

- FutureTPM: Future Proofing the Connected World – A Quantum-Resistant Trusted Platform Module

- CUREX – Secure and private Health Data Exchange
- INCOGNITO – Identity Verification with Privacy-Preserving Credentials for Anonymous Access To Online Services
- SECONDO – A Security ECONomics service platform for smart security investments and cyber insurance pricing in the beyond 2020 netwOrking era

16:45 – 17:00

CLOSING

MSTEC: 2nd Model-driven Simulation and Training Environments for Cybersecurity

Workshop website: <https://www.threat-arrest.eu/html/mstec/>

Thursday, 17th September 2020

09:00 – 09:15

WELCOME

Workshop chairs

09:15 – 10:15

SESSION 1:

- Cyber Taxi: A Taxonomy of Interactive Cyber Training and Education Systems
Abstract video link: <https://youtu.be/Q9PhPGSHa8U>
Marcus Knupfer, Tore Bierwirth, Lars Stiemert, Matthias Schopp, Sebastian Seeber, Daniela Pohn, and Peter Hillmann
- Cyber Range Training Programme Specification through Cyber Threat and Training Preparation Models
Abstract video link: <https://www.youtube.com/watch?v=7h2mwfDoeJo&feature=youtu.be>
Michail Smyrlis, Konstantinos Fysarakis, George Spanoudakis, and George Hatzivasilis

10:15 – 11:15

SESSION 2:

- A Pond Full of Phishing Games - Analysis of Learning Games for Anti-Phishing Education
Abstract video link: <https://www.youtube.com/watch?v=B3P6WBcoVcM>
Rene Roepke, Klemens Koehler, Vincent Drury, Ulrik Schroeder, Martin R. Wolf, and Ulrike Meyer
- Conceptualization of a CyberSecurity Awareness Quiz
Abstract video link: <https://youtu.be/FbtNlqAjuKw>
Sebastian Pape, Ludger Goeke, Alejandro Quintanar, and Kristian Beckers

11:15 – 12:15

SESSION 3:

- Towards the Monitoring and Evaluation of Trainees' Activities in Cyber Ranges
Abstract video link: https://youtu.be/zu_wIzJ7IxE
Chiara Braghin, Stelvio Cimato, Ernesto Damiani, Fulvio Frati, Elvinia Riccobene, and Sadegh Astaneh
- Automatically protecting network communities by systematically analysing the simulation results from malware epidemiological models
Abstract video link: <https://youtu.be/Iz1Jo7IWCOo>
Xiao-Si Wang, Jessica Welding, and Tek Kan Chung

12:15 – 12:30

PANEL

12:30 – 13:30

BREAK

13:30 – 14:30

SESSION 4:

- Chasing Botnets: A Real Security Incident Investigation
Abstract video link: <https://youtu.be/4ZprVe9OdxE>
Martin Kunc and George Hatzivasilis
- Software System Exploration using Library Call Analysis
Abstract video link: <https://youtu.be/qCB8YzcX-vI>
Marinos Tsantekidis and Vassilis Prevelakis

14:30 – 15:30

SESSION 5:

- A pattern-driven adaptation in IoT orchestrations to guarantee SPDI properties
Abstract video link: <https://youtu.be/Qe-25s9PC4M>
Manos Papoutsakis, Konstantinos Fysarakis, Emmanouil Michalodimitrakis, Eftychia Lakka, Nikolaos Petroulakis, George Spanoudakis, and Sotiris Ioannidis
- Password Management: How Secure Is Your Login Process?
Abstract video link: https://youtu.be/H_8LLJEosRw
George Hatzivasilis

15:30 – 15:45

PANEL

ETAA: 3rd International Workshop on Emerging Technologies for Authorization and Authentication

Workshop website: <https://www.iit.cnr.it/etaa2020/index.html>

Friday, 18th September 2020

09:00 – 10:30

SESSION 1: Authentication

- Deep Learning based Sequential Mining for User Authentication in Web Applications
Abstract video link: <https://www.youtube.com/watch?v=zgMyWII-BnA&feature=youtu.be>
Matan Levi and Itay Hazan
- An Interoperable Architecture for Usable Password-less Authentication
Abstract video link: <https://youtu.be/9QHNCA5ntuw>
Matthew Casey, Mark Manulis, Christopher Newton, Robin Savage and Helen Treharne
- auth.js: Advanced Authentication for the Web
Abstract video link: <https://youtu.be/bgAzf5PWH-Q>
Neophytos Christou and Elias Athanasopoulos

10:30 – 11:00

BREAK

11:00 – 12:30

SESSION 2: Identity Management

- The cost of having been pwned: a security service provider's perspective
Abstract video link: <https://youtu.be/jKxJRZ-Wt9k>
Gergely Biczók, Máté Horváth, Szilveszter Szebeni, István Lám and Levente Buttyán
- Automated and Secure Integration of the OpenID Connect iGov Profile in Mobile Native Applications
Abstract Video link: https://youtu.be/f4szL_u3C5c
Amir Sharif, Roberto Carbone, Silvio Ranise and Giada Sciarretta
- Micro-Id-Gym: a Flexible Tool for Pentesting Identity Management Protocols in the Wild and in the Laboratory
Abstract video link: <https://youtu.be/XZ60bybva-s>
Andrea Bisegna, Roberto Carbone, Giulio Pellizzari and Silvio Ranise

12:30 – 14:00

BREAK

14:00 – 16:00

SESSION 3: Authorization

- A Comparison Among Policy Editors for Attributed Based Access Control Model
Abstract video link: <https://youtu.be/D9ig0npxKs8>
Fabio Martinelli, Christina Michailidou, Oleksii Osliak, Alessandro Rosetti, Antonio La Marra and Theo Dimitrakos
- On Results of Data Aggregation Operation
Abstract video link: <https://youtu.be/AsvLzvFDfu0>
Francesco Di Cerbo, Marco Rosa and Rocio Cabrera Lozoya

- An automatic distributed firewalls configuration: An argumentation reasoning approach
Abstract video link: <https://youtu.be/jF5bBfysses>
Erisa Karafili and Fulvio Valenza
- IFTTT Privacy Checker
Abstract video link: <https://youtu.be/CFfYxIWjWc8>
Federica Paci, Davide Bianchin, Elisa Quintarelli and Nicola Zannone

SPOSE: 2nd Workshop on Security, Privacy, Organizations, and Systems Engineering

Workshop website: <https://spose-ws.github.io/>

Friday, 18th September 2020

09:00 – 09:15

WELCOME

Workshop chairs: Angela Sasse, Frank Pallas, Jörg Pohle

09:15 – 9:45

KEYNOTE

Title: Responsibilization in Cyber Security

Speaker: *[Karen Renaud](#) (Abertay University, Dundee)*

9:45 – 10:45

SESSION 1:

- Nothing Standard About It: An Analysis of Minimum Security Standards in Organizations
Abstract video link: https://www.youtube.com/watch?v=Mlul_uXXaoU
[Jake Weidman](#), [Igor Bilogrevic](#), [Jens Grossklags](#)
- The Bigger Picture: Approaches to Inter-Organizational Data Protection Impact Assessment
Abstract video link: <https://youtu.be/SP-nih32yhE>
[Dimitri Van Landuyt](#), [Laurens Sion](#), [Pierre Dewitte](#), [Wouter Joosen](#)

10:45 – 11:00

BREAK

11:00 – 12:00

SESSION 2:

- Systematic Scenario Creation for Serious Security-Awareness Games
Abstract video link: <https://youtu.be/cnyHYr-xHMo>
[Vera Hazilov](#), [Sebastian Pape](#)
- Analysing Simulated Phishing Campaigns for Staff
Abstract video link: TBA
[Melanie Volkamer](#), [Martina Angela Sasse](#)

ADIoT: International Workshop on Attacks and Defenses for Internet-of-Things

Workshop website: <http://adiot2020.compute.dtu.dk/>

Friday, 18th September 2020

09:00 – 09:15

WELCOME

Workshop chairs

09:15 – 10:45

SESSION 1:

- Cooperative Speed Estimation of an RF Jammer in Wireless Vehicular Networks
Abstract video link: <https://www.youtube.com/watch?v=o4Vzt-YpblI>
Dimitrios Kosmanos, Savvas Chatzisavvas, Antonios Argyriou and Leandros Maglaras
- Extended Abstract: Towards Physical-Layer Authentication for Backscatter Devices
Abstract video link: <https://youtu.be/GQ3fEJi4WXQ>
Thiemo Voigt, Carlos Perez-Penichet and Christian Rohner
- P2Onto: Making Privacy Policies Transparent
Abstract video link: <https://youtu.be/2qlYLPUehmc>
Evgenia Novikova, Elena Doynikova and Igor Kotenko
- Extended Abstract - Transformers: Intrusion Detection Data In Disguise
Abstract video link: <https://youtu.be/0VagBKJvt2Q>
James Boorman, Benjamin Green and Daniel Prince

DETIPS: Interdisciplinary Workshop on Trust, Identity, Privacy and Security in Digital Economy

Workshop website: <https://detips2020.github.io/>

Friday, 18th September 2020

09:00 – 10:45

WELCOME by workshop chairs (Ioana Boureanu, Catalin Dragan, Mark Manulis) & SESSION 1:

- Post-Quantum Certificates for Electronic Travel Documents
Abstract video link:
[Gaetan Pradel and Chris Mitchell](#)
- kUBI: A Framework for Privacy and Transparency in Sensor-Based Business Models for Consumers: A Pay-How-You-Drive Example
Abstract video link: <https://youtu.be/REU6xKNcQYU>
[Christian Roth](#), [Mario Saur](#) and [Dogan Kesdogan](#)
- Keeping it Human: A focus group study of public attitudes towards AI in banking
Abstract video link: <https://youtu.be/GzeP58Rynks>
[Mhairi Aitken](#), [Magdalene Ng](#), [Ehsan Toreini](#), [Aad Van Moorsel](#), [Kovila Coopamootoo](#) and [Karen Elliott](#)
- Creative Toolkits for TIPS
Short Talk. Abstract video link: <https://youtu.be/GzeP58Rynks>
[Helen Collard](#) and [Jo Briggs](#)

11:00 – 12:30

SESSION 2:

- Verifiable Contracting
Short talk. Abstract video link: <https://youtu.be/ApPYRhdAFY8>
[Sérgio Manuel Nóbrega Gonçalves](#), [Alessandro Tomasi](#), [Andrea Biseгна](#), [Giulio Pellizzari](#) and [Silvio Ranise](#)
- Risk Assessment of Sharing Cyber Threat Intelligence
Abstract video link: <https://youtu.be/yM6V28y5jC4>
[Adham Albakri](#), [Eerke Boiten](#) and [Richard Smith](#)
- IMC: A Classification of Identity Management Approaches
Abstract video link: <https://youtu.be/uvWMDciaabU>
[Daniela Pöhn](#) and [Wolfgang Hommel](#)
- Development of Trust Infrastructures for Virtual Asset Service Providers
Abstract video link: <https://youtu.be/6dKu8CovkLo>
[Thomas Hardjono](#)

MPS: 3rd International Workshop on Multimedia Privacy and Security

Workshop website: <https://sites.dartmouth.edu/mps-workshop/>

Friday, 18th September 2020

13:30 – 14:30

WELCOME by workshop chairs & KEYNOTE 1

Title: Forensics in the encrypted domain: Analysis of Networks Stream to Detect Keystrokes and Audio-Video User Behaviour

Speakers: *Jana Dittmann and Christian Kraetzer*

14:30 – 15:00

KEYNOTE 2

Title: Introduction to the new JPEG Fake Media working group

Speaker: *[Frederik Temmermans](#)*

15:00 – 15:30

BREAK

15:30 – 17:00

SESSION 1:

- 15:30-16:00 You've got nothing on me! Privacy Friendly Face Recognition Reloaded
Abstract video link: <https://youtu.be/cE53uuMAfgo>
Stephan Escher, [Patrick Teufert](#), Lukas Hain, and Thorsten Strufe
- 16:00-16:30 OR-Benchmark: An Open and Reconfigurable Digital Watermarking Benchmarking Framework
Abstract video link: TBA
Hui Wang, Anthony T.S. Ho, and Shujun Li
- 16:30-17:00 Twizzle - A Multi-Purpose Benchmarking Framework for Semantic Comparisons of Multimedia Object Pairs
Abstract video link: <https://youtu.be/IsDnYaxvYYI>
[Stephan Escher](#), [Patrick Teufert](#), Robin Hermann, and Thorsten Strufe

CPS4CIP: 1st International Workshop on Cyber-Physical Security for Critical Infrastructures Protection

Workshop website: <https://sites.google.com/fbk.eu/cps4cip20>

Friday, 18th September 2020

09:00 – 09:45

WELCOME by workshop chairs & KEYNOTE 1

Chairs: Habtamu Abie & Silvio Ranise

Title: Digital Twins in Industrial Ecosystems: Challenges, Security Issues and Countermeasures

Speaker: Cristina Alcaraz, University of Málaga

09:45 – 10:45

SESSION 1: Security Threat Intelligence

Chairs: Habtamu Abie & Silvio Ranise

- Privacy-Preserving CCTV Analytics for Cyber-Physical Threat Intelligence
Abstract video link: <https://www.youtube.com/watch?edufilter=NULL&v=Gbr9d7tLYKY>
Jürgen Neises, Adrien Besse and Jean-Baptiste Rouquier
- TLSAssistant goes FINSEC: A Security Platform Integration Extending Threat Intelligence Language
Abstract video link: <https://youtu.be/oM9se6e1HV0>
Salvatore Manfredi, Silvio Ranise, Giada Sciarretta and Alessandro Tomasi
- Cyber Threat Monitoring Systems - Comparing attack detection performance of ensemble algorithms
Eva Maia, Bruno Reis, Isabel Praça, Adrien Becue, David Lancelin, Samantha Dauguet Demailly and Orlando Sousa
- FINSTIX: a Cyber-Physical Data Model for Financial Critical Infrastructures
Abstract video link: <https://youtu.be/-eRYoizOSBg>
Giorgia Gazzarata, Ernesto Troiano, Luca Verderame, Maurizio Aiello, Ivan Vaccari, Enrico Cambiaso and Alessio Merlo

10:45 - 11:00

BREAK

11:00 – 11:45

SESSION 2: Data Anomaly detection: Predict & Prevent

Chairs: Isabel Praça

- Inferring anomaly situation from multiple data sources in Cyber Physical Systems
Abstract video link: <https://youtu.be/9chmYUnJB-w>
Sara Baldoni, Giuseppe Celozzi, Alessandro Neri, Marco Carli and Federica Battisti
- Fusing RGB and Thermal Imagery with Channel State Information for Abnormal Activity Detection using Multimodal Bidirectional LSTM
Abstract video link: <https://youtu.be/iSN3Y92ZTh0>
Nikolaos Bakalos, Athanasios Voulodimos, Nikolaos Doulamis, Anastasios Doulamis, Kassiani Papatotiriou and Matthaios Bimpas
- A Cloud-Based Anomaly Detection for IoT Big Data
Omri Soceanu, Allon Adir, Lev Greenberg, Ehud Aharoni and Habtamu Abie

11:45 - 12:00

BREAK

12:00 – 12:30

SESSION 3: Computer Vision & Dataset for Security

Chairs: Federica Battisti

- An advanced Framework for Critical Infrastructure Protection using computer vision technologies
Abstract video link: <https://youtu.be/dxMirSzbziQ>
Krishna Chandramouli and Ebroul Izquierdo
- A Comprehensive Dataset from a Smart Grid Testbed for Machine Learning based CPS Security Research
Abstract video link: <https://youtu.be/HcSYNoxoEZk>
Chuadhry Mujeeb Ahmed and Nandha Kumar

12:30 - 13:30

BREAK

13:30 - 14:00

KEYNOTE 2

Chairs: Federica Battisti

Title: Cyber physical security in automotive: the new challenge for smart cities

Abstract video link: <https://youtu.be/ldo63FrRbHg>

Speaker: *Federica Pascucci*, Roma Tre University

14:00 – 14:45

SESSION 4: Security Management & Governance

Chairs: Rita Ugarelli

- Cross-Domain Security Asset Management for Healthcare
Abstract video link: <https://youtu.be/3xWq0PNLkQc>
Federico Stirano, Francesco Lubrano, Giacomo Vitali, Giuseppe Varavallo, Paolo Petrucci and Fabrizio Bertone
- Towards a global CIs' cyber-physical security management and joint coordination approach
Abstract video link: <https://youtu.be/FYORiS4vKXE>
Vasiliki Mantzana, Eftichia Georgiou, Anna Gazi, Ilias Gkotsis, Ioannis Chasiotis and Georgios Eftychidis
- Toward a Context-Aware Methodology for Information Security Governance Assessment Validation
Abstract video link: <https://youtu.be/W1TR0QmsxZE>
Marco Angelini, Silvia Bonomi, Claudio Ciccotelli and Alessandro Palma

14:45 - 15:00

BREAK

15:00 – 15:30

SESSION 5: Impact Propagation & Power Traffic Analysis

Chairs: Luca Verderame

- Impact Propagation in Airport Systems
Corinna Koepke, Kushal Srivastava, Louis Koenig, Natalie Miller, Mirjam Fehling-Kaschek, Kelly Burke, Matteo Mangini, Isabel Parca, Alda Canito, Olga Carvalho, Filipe Apolinario, Nelson Escravana, Nils Carstengerdes and Tim Stelkens-Kobsch

- A Comparative Analysis of Emulated and Real IEC-104 Spontaneous Traffic in Power System Networks
Abstract video link: https://youtu.be/irEVXh3v7_c
Chih-Yuan Lin and Simin Nadjm-Tehrani

15:30 - 16:00

CLOSING & PLANNING

Chairs: Habtamu Abie & Silvio Ranise

KEYNOTE TALKS



Prof. Cristina Alcaraz is an Associate Professor in the Computer Science Department at the University of Málaga. She has been awarded two competitive postdoctoral fellowships: Marie-Curie in 2012 and Ramón-y-Cajal in 2015, and was a guest researcher at NIST (2011–2012) visiting later the Royal Holloway (2012–2014, under the Marie-Curie fellowship), UCBM (2017, Rome) and the University of Piraeus (2019, Athens). She has been involved in European (e.g., FACIES, SealedGRID and CyberSec4Europe) and national research projects (e.g., SADECEI-4.0, SADCIP, PERSIST, PISCIS, SECRET, TIGRIS), focusing on topics related to CIP (security in Smart Grids, SCADA systems, cyber-physical systems and Industry 4.0) and Digital Twins security. So far, she has more than 75 publications and serves on international conference committees and on Editorial Boards of journals in CIP and information security.

Title: Digital Twins in Industrial Ecosystems: Challenges, Security Issues and Countermeasures

Abstract: Increasingly, we are witnessing how the new information technologies are being introduced into industrial systems to modernize their ecosystems and optimize services. One of the most novelty technologies in this field is precisely the Digital Twin, which allows to simulate states of the physical world, predict behavior and improve the quality of the product, service or system (e.g., a manufacturing system, a Smart Grid system or a nuclear plant). However, in this adaptation we must also be aware of: (i) the new challenges that this technology could require for its implementation in complex and critical systems; (ii) the security issues that this technology could bring in critical contexts; and (iii) the countermeasures that we should be considered in the future.



Ass. Prof. Federica PASCUCCI received the Laurea Degree (M.S.) in Computer Science and Control Engineering from University of Roma Tre in 2000 and the PhD Degree in Systems Engineering from the University of Rome “La Sapienza” in 2004. Since 2006, she is Assistant Professor of Robotics and Automatic Control at the University of Roma Tre. Her research interests are in the field of robotics, cyber-physical systems, analysis and design of networked embedded control systems, with applications to sensor actuators networks. She addresses resilient design of cyber-physical systems and critical infrastructures. He has published over 100 journal and conference papers and book chapters. With the MCIP-Lab group, she has been principal investigator in several European re- search projects (FP7 ECHORD, RISING, REFIRE) and in many national projects (RAMPS, EXPLORERS, Smart

Environments, MISE-ENEA PAR projects).

Title: Cyber physical security in automotive: the new challenge for smart cities

Abstract: The advent of the Internet of things and connected technologies has enabled large changes in real-life applications. Autonomous car, that was a main dream in science fiction for a long time, is becoming a real consumer-level object as several companies start developing their own models. While autonomous vehicles have the potential to reshape transport and society, reducing air pollution and traffic congestion, one of the major issues facing developers is their security. Since autonomous cars are cyber physical systems, security vulnerabilities turn to be far more dangerous than malicious email or stolen private data. Malicious attacks to autonomous vehicle can physically harm passengers or pedestrians or compromise the transportation system. In this talk, the security issues related with vehicle-to-everything communication are addressed: this system will enable most of the services provided for the transportation system in future smart cities.