2023 IEEE European Symposium on Security and Privacy Workshops (EuroS&PW 2023)

Delft, Netherlands 3-7 July 2023



IEEE Catalog Number: CFP23N35-POD ISBN: 979-8-3503-2721-2

Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP23N35-POD

 ISBN (Print-On-Demand):
 979-8-3503-2721-2

 ISBN (Online):
 979-8-3503-2720-5

ISSN: 2768-0649

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA

Phone: (845) 758-0400 Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



2023 IEEE European Symposium on Security and Privacy Workshops (EuroS&PW)

EuroSPW 2023

Table of Contents

Welcome Message from the General Chairs Welcome Message from the Workshop Chairs	
ACSW: Automotive Cyber Security Workshop	
A Threat Model for Soft Privacy on Smart Cars Mario Raciti (Università degli Studi di Catania, Italy) and Giampaolo Bella (Università degli Studi di Catania, Italy)	1
Vulnerability Analysis of Vehicular Coordinated Maneuvers Konstantinos Kalogiannis (KTH Royal Institute of Technology, Sweden), Andreas Henriksson (KTH Royal Institute of Technology, Sweden), and Panos Papadimitratos (KTH Royal Institute of Technology, Sweden)	11
DevSecOpsRO: Research and Opportunities on Secure Software Development	
A Preliminary Study of Privilege Life Cycle in Software Management Platform Automation Workflows	21
An Investigation of Quality Issues in Vulnerability Detection Datasets	29
GLICE: Combining Graph Neural Networks and Program Slicing to Improve Software Vulnerability Detection	34

Guiding Directed Fuzzing with Feasibility	42
Effective Machine Learning-based Access Control Administration through Unlearning	50
An Analysis System to Test Security of Software on Continuous Integration-Continuous Delivery Pipeline	58
Tales from the Git: Automating the Detection of Secrets on Code and Assessing Developers' Passwords Choices	68
A 'Human-in-the-Loop' Approach for Information Extraction from Privacy Policies under Data Scarcity Michael Gebauer (Information Systems Engineering - TU Berlin, Berlin), Faraz Maschhur (Information Systems Engineering - TU Berlin, Berlin), Nicola Leschke (Information Systems Engineering - TU Berlin, Berlin), Elias Grünewald (Information Systems Engineering - TU Berlin, Berlin), and Frank Pallas (Information Systems Engineering - TU Berlin, Berlin)	76
Faraz Maschhur (Information Systems Engineering - TU Berlin, Berlin), Nicola Leschke (Information Systems Engineering - TU Berlin, Berlin), Elias Grünewald (Information Systems Engineering - TU Berlin, Berlin),	
An Analysis of Requirements and Privacy Threats in Mobile Data Donations	
ATLAS: Automatically Detecting Discrepancies Between Privacy Policies and Privacy Labels Akshath Jain (Carnegie Mellon University), David Rodriguez (Universidad Politécnica de Madrid), Jose M. del Alamo (Universidad Politécnica de Madrid), and Norman Sadeh (Carnegie Mellon University)	94
Automating Privacy Decisions – Where to Draw the Line? Victor Morel (Chalmers University of Technology, Sweden) and Simone Fischer-Hübnerr (Chalmers University of Technology & Karlstad University, Sweden)	108
Lessons Learned: Building a Privacy-Preserving Entity Resolution Adaptation of PPJoin using End-to-End Homomorphic Encryption	117
Privacy as an Architectural Quality: A Definition and an Architectural View	125

Secure Key Management for Multi-Party Computation in MOZAIK Enzo Marquet (KU Leuven, Belgium), Jerico Moeyersons (Ghent University, Belgium), Erik Pohle (KU Leuven, Belgium), Michiel Van Kenhove (Ghent University, Belgium), Aysajan Abidin (KU Leuven, Belgium), and Bruno Volckaert (Ghent University, Belgium)	133
Unified Communication: What do Digital Activists Need? Thomas Reisinger (De Montfort University, United Kingdom), Isabel Wagner (University of Basel, Switzerland), and Eerke Albert Boiten (De Montfort University, United Kingdom)	141
Comparing Privacy Label Disclosures of Apps Published in Both the App Store and Google Play Stores	150
WACCO: Workshop on Attackers and Cyber-Crime Operations	
"Get a Higher Return on Your Savings!": Comparing Adverts for Cryptocurrency Investment Scams Across Platforms Gilberto Atondo Siu (University of Cambridge, United Kingdom) and Alice Hutchings (University of Cambridge, United Kingdom)	158
An Argument for Linguistic Expertise in Cyberthreat Analysis: LOLSec in Russian Language eCrime Landscape	170
Applying Neutralisation Theory to Better Understand Ransomware Offenders	177
Digital Drift and the Evolution of a Large Cybercrime Forum	183
Enhancing Vulnerability Prioritization: Data-Driven Exploit Predictions with Community-Driven Insights Jay Jacobs (Cyentia Institute), Sasha Romanosky (RAND Corporation), Octavian Suciu (University of Maryland), Ben Edwards (Cyentia Institute), and Armin Sarabi (University of Michigan)	194
How Cryptocurrency Exchange Interruptions Create Arbitrage Opportunities	207
Mapping the Cyberstalking Landscape: An Empirical Analysis of Federal U.S. Crimes	216
On Gaps in Enterprise Cyber Attack Reporting	227

The Peculiar Case of Tailored Phishing against SMEs: Detection and Collective Defense	. 232
Mechanisms at a Small IT Company Pavlo Burda (Eindhoven University of Technology), Abdul Malek Altawekji (Eindhoven University of Technology), Luca Allodi (Eindhoven University of Technology), and Nicola Zannone (Eindhoven University of Technology)	. 232
Visualizing Cyber-Threats in Underground Forums James Burroughs (King's College London, United Kingdom), Michal Tereszkowski-Kaminski (King's College London, United Kingdom), and Guillermo Suarez-Tangil (IMDEA Networks Institute, Spain)	. 244
SILM: Workshop on Security of Software/Hardware Interfaces	
A Hybrid Solution for Constrained Devices to Detect Microarchitectural Attacks Nikolaos-Foivos Polychronou (Univ. Grenoble Alpes, CEA, LETI, DSYS, LSES, France), Pierre-Henri Thevenon (Univ. Grenoble Alpes, CEA, LETI, DSYS, LSES, France), Maxime Puys (Univ. Grenoble Alpes, CEA, LETI, DSYS, LSES, France), and Vincent Beroulle (Univ. Grenoble Alpes, Grenoble-INP, LCIS, France)	. 259
A Practical Deep Learning-Based Acoustic Side Channel Attack on Keyboards	. 270
Combined Internal Attacks on SoC-FPGAs: Breaking AES with Remote Power Analysis and Frequency-based Covert Channels	. 281
Emulating Side Channel Attacks on Gem5: Lessons Learned Lilian Bossuet (UJM Saint-Etienne, CNRS, France), Vincent Grosso (UJM Saint-Etienne, CNRS, France), and Carlos Andres Lara-Nino (UJM Saint-Etienne, CNRS, France)	. 287
TimeInspector: A Static Analysis Approach for Detecting Timing Attacks Fatih Durmaz (Sabanci University, Turkey), Nureddin Kamadan (Sabanci University, Turkey), Melih Taha Öz (Sabanci University, Turkey), Musa Unal (Sabanci University, Turkey), Arsalan Javeed (Sabanci University, Turkey), Cemal Yilmaz (Sabanci University, Turkey), and Erkay Savas (Sabanci University, Turkey)	. 296
Work in Progress: Thwarting Timing Attacks in Microcontrollers using Fine-Grained Hardware Protections Nicolas Gaudin (Univ. Bretagne-Sud, France), Jean-Loup Hatchikian-Houdot (Univ. Rennes, France), Frédéric Besson (Univ. Rennes, France), Pascal Cotret (UMR 6285, Lab-STICC, ENSTA Bretagne, France), Guy Gogniat (Univ. Bretagne-Sud, France), Guillaume Hiet (Univ. Rennes, France), Vianney Lapotre (Univ. Bretagne-Sud, France), and Pierre Wilke (Univ. Rennes, France)	. 304

Faulting Original McEliece's Implementations is Possible How to Mitigate this Risk?
RICSS: International Workshop on Re-design Industrial Control Systems with Security
A Digital Forensic Taxonomy For Programmable Logic Controller Data Artefacts
A Key to Embedded System Security: Locking and Unlocking Secrets with a Trusted Platform Module
Teri Lenard (University of Geneva, Switzerland), Anastasija Collen (University of Geneva, Switzerland), Niels A. Nijdam (University of Geneva, Switzerland), and Bela Genge (University of Medicine, Romania)
From Tactics to Techniques: A Systematic Attack Modeling for Advanced Persistent Threats in Industrial Control Systems
The Bandit's States: Modeling State Selection for Stateful Network Fuzzing as Multi-armed Bandit Problem
The Case for Virtual PLC-Enabled Honeypot Design
To me, to you: Towards Secure PLC Programming through a Community-Driven Open-Source Initiative
Unsafe Behavior Detection with Adaptive Contrastive Learning in Industrial Control Systems 363 Xu Zheng (Florida International University, USA), Tianchun Wang (Pennsylvania State University, USA), Samin Yasar Chowdhury (Florida International University, USA), Ruimin Sun (Florida International University, USA), and Dongsheng Luo (Florida International University, USA)
ARCSG: Advancing Resilience of Cyber-Physical Smart Grid: An Integrated Co-Simulation Approach Incorporating Indicators of Compromise

Re-Envisioning Industrial Control Systems Security by Considering Human Factors as a Core
Element of Defense-in-Depth
Jens Pottebaum (Paderborn University, Germany; Heinz Nixdorf
Institute, Germany), Jost Rossel (Paderborn University, Germany),
Juraj Somorovsky (Paderborn University, Germany), Yasemin Acar
(Paderborn University, The George Washington University, USA), René
Fahr (Paderborn University, Germany; Heinz Nixdorf Institute,
Germany), Patricia Arias Cabarcos (Paderborn University, Germany),
Eric Bodden (Paderborn University, Germany; Heinz Nixdorf Institute, Germany; Fraunhofer IEM, Germany), and Iris Gräßler (Paderborn
University, Germany; Heinz Nixdorf Institute, Germany)
amoeroug, Germany, Henra Ivixaory momente, Germany
LPW: Location Privacy Workshop
D-GATE: Decentralized Geolocation and Time Enforcement for Usage Control
(Fraunhofer AISEC, Germany), and Michael Lux (Fraunhofer AISEC, Germany)
Hexanonymity: a Scalable Geo-Positioned Data Clustering Algorithm for Anonymisation Purposes
Javier Rodriguez-Viñas (GRADIANT, Spain), Ines Ortega-Fernandez
(GRADIANT, Spain; Universidade de Vigo, Spain), and Eva Sotos Martínez (GRADIANT, Spain)
Masking Location Streams in the Presence of Colluding Service Providers
Toon Dehaene (KU Leuven, Belgium), Michiel Willocx (KU Leuven,
Belgium), Bert Lagaisse (KU Leuven, Belgium), and Vincent Naessens (KU Leuven, Belgium)
WoRMA: Workshop on Robust Malware Analysis
A Wolf in Sheep's Clothing: Query-Free Evasion Attacks Against Machine Learning-Based
Malware Detectors with Generative Adversarial Networks 415
Daniel Gibert (CeADAR/University College Dublin, Ireland), Jordi Planes (University of Lleida, Spain), Quan Le (CeADAR/University
College Dublin, Ireland), and Giulio Zizzo (IBM Research Europe,
Ireland)
Simplification of General Mixed Boolean-Arithmetic Expressions: GAMBA
Benjamin Reichenwallner (Denuvo GmbH, Austria) and Peter
Meerwald-Stadler (Denuvo GmbH, Austria)
Temporal Analysis of Distribution Shifts in Malware Classification for Digital Forensics
Francesco Zola (Vicomtech, Basque Research and Technology Alliance
(BRTA), Spain), Jan Lukas Bruse (Vicomtech, Basque Research and
Technology Alliance (BRTA), Spain), and Mikel Galar (Public University
of Navarre, Spain)

AD&D: Workshop on Active Defense and Deception

How Well does GPT Phish People? An Investigation Involving Cognitive Biases and Feedback 45 Megha Sharma (Indian Institute of Technology Mandi, India), Kuldeep Singh (University of Texas at El Paso, USA), Palvi Aggarwal (University of Texas at El Paso, USA), and Varun Dutt (Indian Institute of Technology Mandi, India)	51
Learning to Defend by Attacking (and Vice-Versa): Transfer of Learning in Cybersecurity Games	58
(Carnegie Mellon University)	
Honey Infiltrator: Injecting Honeytoken Using Netfilter	5 5
WTMC: International Workshop on Traffic Measurements for Cybersecurity	
A First Look at SVCB and HTTPS DNS Resource Records in the Wild	70
Assessing and Exploiting Domain Name Misinformation	75
Assessing Network Operator Actions to Enhance Digital Sovereignty and Strengthen Network Resilience: A Longitudinal Analysis during the Russia-Ukraine Conflict	37
Detecting and Analyzing Mouse Tracking in the Wild	} 5
Inside Residential IP Proxies: Lessons Learned from Large Measurement Campaigns)1
Lost in Translation: AI-based Generator of Cross-Language Sound-Squatting	13

Revisiting OAuth 2.0 Compliance: A Two-Year Follow-Up Study	521
TLS Post-Quantum TLS: Inspecting the TLS Landscape for PQC Adoption on Android	526
Towards More Rigorous Domain-based Metrics: Quantifying the Prevalence and Implications of "Active" Domains	539
Unveiling the Weak Links: Exploring DNS Infrastructure Vulnerabilities and Fortifying Defenses Yevheniya Nosyk (Université Grenoble Alpes, France), Olivier Hureau (Université Grenoble Alpes, France), Simon Fernandez (Université Grenoble Alpes, France), Andrzej Duda (Université Grenoble Alpes, France), and Maciej Korczyński (Université Grenoble Alpes, France)	546
Fake it Till You Detect it: Continual Anomaly Detection in Multivariate Time-Series using Generative AI	558
Identifying and Differentiating Acknowledged Scanners in Network Traffic M. Patrick Collins (USC Information Sciences Institute, USA), Alefiya Hussian (USC Information Sciences Institute, USA), and Stephen Schwab (USC Information Sciences Institute, USA)	567
STAST: Workshop on Socio-Technical Aspects in Security	
"As Usual, I Needed Assistance of a Seeing Person": Experiences and Challenges of People with Disabilities and Authentication Methods	575
Talking Abortion (Mis)information with ChatGPT on TikTok	594
Work in Progress: A Glance at Social Media Self-Censorship in North America	509

Position Paper: The Role of law in Achieving Privacy and Security Measures in Smart Buildings from the GDPR Context	619
Natalie Leesakul (Newcastle University, United Kingdom) and Charles Morisset (Newcastle University, United Kingdom)	
Divided We Hack: Exploring the Degree of Sino-Russian Coordination in Cyberspace During the Ukraine War	627
U-Sense: Feasibility Study of "Human as a Sensor" in Incident Reporting Systems in a Smart Campus	641
Naoom Abu Abah (Newcastle University, UK), Nick Taylor (Newcastle University, UK), Charles Morisset (Newcastle University, UK), and Maryam Mehrnezhad (University of London, UK)	
Work in Progress: Evaluation of Security Standards through a Cyber Range using Hackers' Tactics, Techniques and Procedures Patrick Wake (Durham University, UK), Sue Black (Durham University, UK), and Jonathan Young (Durham University, UK)	653
What We Do in the Shadows: How does Experiencing Cybercrime Affect Response Actions & Protective Practices?	659
Author Index	673