SECURWARE 2024

The Eighteenth International Conference on Emerging Security Information, Systems and Technologies

November 3rd - 7th, 2024

Nice, France

SECURWARE 2024 Editors

Fatima Hussain, Toronto Metropolitan University, Toronto, Canada

Steffen Fries, Siemens AG, Germany

Printed from e-media with permission by:

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

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2025)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

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
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Detecting Denial of Service Attacks in Smart Grids Using Machine Learning: A Study of IEC-61850 Protocols 1
Antonin Delhomme, Livinus Obiora Nweke, and Sule Yildirim Yayilgan

Framework for Quantum Digital Wallets 9
Javaid Iqbal Zahid, Alex Ferworn, and Fatima Hussain

Evaluating the Robustness of Kolmogorov-Arnold Networks against Noise and Adversarial Attacks 11
Evgenii Ostanin, Nebojsa Djosic, Fatima Hussain, Salah Sharieh, and Alexander Ferworn

KAN vs KAN: Examining Kolmogorov-Arnold Networks (KAN) Performance under Adversarial Attacks 17
Nebojsa Djosic, Evgenii Ostanin, Fatima Hussain, Salah Sharieh, and Alexander Ferworn

An AI-based Cognitive Architecture for Augmenting Cybersecurity Analysts 23
Salvatore Vella, Moussa Noun, Salah Sharieh, and Alex Ferworn

Validating Damage Assessment: A Simulation-Based Analysis of Blind Write Lineage in Fog Computing 28
Mariha Siddika Ahmad and Brajendra Panda

Theoretical and Practical Aspects in Identifying Gaps and Preparing for Post-Quantum Cryptography 36
Jorn-Marc Schmidt and Alexander Lawall

Riskpool – A Security Risk Management Methodology 43
Martin Ring, Paul Duplys, and Sven Kohler

Device Onboarding Transparency – Supporting Initial Trust Establishment 47
Steffen Fries and Rainer Falk

Fast Charging Communication and Cybersecurity: A Technology Review 52
Jakob Low, Kevin Mayer, and Hans-Joachim Hof

Enhanced Arbiter PUF Construction Model to Strengthening PUF-based Authentication 58
Rizka Reza Pahlevi, Hirokazu Hasegawa, Yukiko Yamaguchi, and Hajime Shimada

Towards a Stakeholder-Centric Trust Management Approach for the Automotive Ecosystem 64
Marco Michl and Hans-Joachim Hof

Enhancing Phishing Detection: An Eye-Tracking Study on User Interaction and Oversights in Phishing Emails 71
Meret Kristen, Fabian Engl, and Jurgen Mottok

Countermeasure against Insider Threat Regarding Psychological State of Organizational Members and Business 81

Impact of Information Resources
Yuki Kodaka, Hirokazu Hasegawa, and Hiroki Takakura

Addressing Malware Family Concept Drift with Triplet Autoencoder 89
Numan Halit Guldemir, Oluwafemi Olukoya, and Jesus Martinez-del-Rincon

Security-risk-mitigation Measures for Automotive Remote Diagnostic System 98
Masaaki Miyashita and Hiroki Takakura

Cyber Threat Response System Design and Test Environment 106
Taewoo Tak, Young-Jun Lee, and Taejin Kim

An Analysis Framework for Steganographic Network Data in Industrial Control Systems 111
Tom Neubert, Bjarne Peuker, Eric Schueler, Henning Ullrich, Laura Buxhoidt, and Claus Vielhauer

Information Hiding Detection in Industrial Control Systems - Statistical Analysis in Modbus TCP/IP 119
Robert Altschaffel, Jana Dittmann, and Lennox Lingk

A Comparative Study of Backbone Architectures for Language Model-Based Intrusion Detection 125
Benedikt Pletzer and Jurgen Mottok

Fingerprinting and Tracing Shadows: The Development and Impact of Browser Fingerprinting on Digital Privacy 132
Alexander Lawall

Forensic Analysis of GAN Training and Generation: Output Artifacts Assessment of Circles and Lines 141
Stefan Seidlitz and Jana Dittmann

Merging Digital Twins and Multi-Agent Systems Approaches for Security Monitoring 148
Zoe Lagache, Annabelle Mercier, Oum-El-Kheir Aktouf, and Arthur Baudet

Vehicle Security Operations Center for Cooperative, Connected and Automated Mobility 156
Kevin Mayer, Tina Volkersdorfer, Jenny Hofbauer, Patrizia Heinl, and Hans-Joachim Hof

SEC-AIRSPACE: Addressing Cyber Security Challenges in Future Air Traffic Management 165
Karin Bernsmed, Per Hakon Meland, Tim Stelkens-Kobsch, Alessandra Tedeschi, Carlo Dambra, Irene Buselli, Enrico Frumento, Davide Martintoni, Valerio Senni, Andrei Gurtov, Gurjot Singh Gaba, Alejandro Sastre Garcia, and Supathida Boonsong

Evaluating Performance Characteristics of Threshold Fully Homomorphic Encryption for Distributed Analytics Scenarios 172
Svetlana Boudko and Kristian Teig Gronvold

Blue Team Fundamentals: Roles and Tools in a Security Operations Center 176

Jenny Hofbauer and Kevin Mayer

Cryptocurrency Integration in Qatar's Financial Markets Analyzing the Opportunities, Issues, and Regulatory Implications 185
Asma Nasser Al-Nassr and Moutaz Alazab