2020 3rd International Conference on Data Intelligence and Security (ICDIS 2020)

South Padre Island, Texas, USA 10 – 12 November 2020



IEEE Catalog Number: CFP20IEA-POD ISBN:

978-1-7281-9380-9

Copyright © 2020 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:
 CFP20IEA-POD

 ISBN (Print-On-Demand):
 978-1-7281-9380-9

 ISBN (Online):
 978-1-7281-9379-3

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



2020 3rd International Conference on Data Intelligence and Security (ICDIS) ICDIS 2020

Table of Contents

Message from the General Chair viii Organizing Committee ix	
Program Committee x	
A Dynamic Multi-Threaded Queuing Mechanism for Reducing the Inter-Process Communication Latency on Multi-Core Chips .12	
A Fast Implementation of the Rijndael Substitution Box for Cryptographic AES .20	
A Feature-Driven Approach for Identifying Pathogenic Social Media Accounts 26. Hamidreza Alvari (Arizona State University), Ghazaleh Beigi (Arizona State University), Soumajyoti Sarkar (Arizona State University), Scott W. Ruston (Arizona State University), Steven R. Corman (Arizona State University), Hasan Davulcu (Arizona State University), and Paulo Shakarian (Arizona State University)	
A Human-Computer Interface for Smart Wheelchair Control Using Forearm EMG Signals .34 Zainab Alibhai (University of Texas at Arlington), Taylor Burreson (University of Texas at Arlington), Matthew Stiller (University of Texas at Arlington), Ishfaq Ahmad (University of Texas at Arlington), Manfred Huber (University of Texas at Arlington), and Addison Clark (University of Texas at Arlington)	
An Analysis of Effectiveness of Black-Box Web Application Scanners in Detection of Stored SQL Injection and Stored XSS Vulnerabilities .40	
Effect of Intermediate Network Systems on Remote Power Data Collection in Smart Grid 49	

Ensemble Learning for Detecting Attacks and Anomalies in IoT Smart Home .56
Evaluation of CentOS Performance under IoT Based DDoS Security Attacks .64. William Robert Rivas (The University of Texas - Rio Grande Valley) and Sanjeev Kumar (The University of Texas - Rio Grande Valley)
Explainable Detection of Zero Day Web Attacks .71. Jonas Herskind Sejr (University of Southern Denmark), Arthur Zimek (University of Southern Denmark), and Peter Schneider-Kamp (University of Southern Denmark)
Identifying Optimal Attacks for Infrastructure Networks with Failure Propagation 79
Improving Sign Language Recognition by Combining Hardware and Software Techniques .87 Cameron Dignan (University of Texas at Arlington), Eliud Perez (University of Texas at Arlington), Ishfaq Ahmad (University of Texas at Arlington), Manfred Huber (University of Texas at Arlington), and Addison Clark (University of Texas at Arlington)
Keep Private Networks Private: Secure Channel-PUFs, and Physical Layer Security by Linear Regression Enhanced Channel Profiles .93
Load-Balancing of Computing Resources in Vehicular Fog Computing .101. Ahmad Raza Hameed (National University of Computer and Emerging Sciences), Kashif Munir (National University of Computer and Emerging Sciences), Saif ul Islam (Institute of Space Technology), and Ishfaq Ahmad (University of Texas at Arlington)
Lodestone: A Streaming Approach to Behavior Modeling and Load Testing 109
Maximizing Resilience under Defender Attacker Model in Heterogeneous Multi-Networks .117 Ishfaq Ahmad (University of Texas at Arlington), Addison Clark (University of Texas at Arlington), Alex Sabol (University of Texas at Arlington), David Ferris (Air Force Research Labs), and Alex Aved (Air Force Research Labs)
Preparing Smart Cities for Ransomware Attacks .127. Pranshu Bajpai (Michigan State University) and Richard Enbody (Michigan State University)

Solving Dynamic 3-SAT Formula: An Empirical Study .134
SPAR-2: A SIMD Processor Array for Machine Learning in IoT Devices .141. Suhail Basalama (University of Arkansas), Atiyehsadat Panahi (University of Arkansas), Ange-Thierry Ishimwe (University of Arkansas), and David Andrews (University of Arkansas)
Trial Risk Index Model and Assessment System Based on Extended TOPSIS Method .148
Author Index 157