The Journal of Digital Forensics, Security and Law

Volume 12, Number 1 (2017)

Editorial Board

Editor-in-Chief
Glenn S. Dardick, PhD, CCE, CCFP
ADFSL
Florida, USA

Associate Editor-in-Chief
Diane Barrett, PhD, CISSP
Bloomsburg University
Pennsylvania, USA

John W. Bagby, JD
The Pennsylvania State University
Pennsylvania, USA

Ibrahim (Abe) Baggili, PhD
University of New Haven
Connecticut, USA

Frank Adelstein, PhD
Cayuga Networks
New York, USA

Raymond Choo, PhD
University of South Australia
South Australia, Australia

David P. Biros, PhD
Oklahoma State University
Oklahoma, USA

Philip Craigier, PhD, CISSP, CCFP
Daytona State College
Florida, USA

Kam Pui (KP) Chow, PhD
University of Hong Kong
Hong Kong, China

Nick V. Flor, PhD
University of New Mexico
New Mexico, USA

David Dampier, PhD
Mississippi State University
Mississippi, USA

Barbara Endicott-Popovsky, PhD
University of Washington
Washington, USA

Virginia N. L. Franqueira, PhD
University of Derby
United Kingdom

Simson Garfinkel, PhD
NIST
Maryland, USA

Sanjay Goel
University at Albany
State University of New York
New York, USA

Joshua James, PhD
Soochunhyang University
South Korea

Erin Kenneally, MFS, JD
Elchemry, Inc.
University of California San Diego
California, USA

Jigang Liu, PhD
Metropolitan State University
Minnesotta, USA

Andrew Marrington, PhD
Zayed University
UAE

Martin Oliver, PhD, CCFP
University of Pretoria
South Africa

Richard Overill, PhD, FBCS
King's College London
United Kingdom

Denise Phelps, PhD, CISSP, PMP
Texas A&M
Texas, USA

John Riley, PhD
Bloomsburg University
Pennsylvania, USA

Marcus K. Rogers, PhD, CISSP
Purdue University
Indiana, USA

Vassil Roussev, PhD
University of New Orleans
Louisiana, USA

Neil Rowe, PhD
U.S. Naval Postgraduate School
California, USA

Kathryn C. Seigfried-Spellar, PhD
The University of Alabama
Alabama, USA

Craig Valli, DIT
Edith Cowan University
Western Australia, Australia

Eli Weintraub, PhD, CISA
Afeka Tel Aviv Academic College of Engineering
Israel

Neil Rowe, PhD
U.S. Naval Postgraduate School
California, USA

Nigel Wilson
The University of Adelaide
South Australia, Australia

Copyright © 2017 ADFSL, the Association of Digital Forensics, Security and Law. Permission to make digital or printed copies of all or any part of this journal is granted without fee for personal or classroom use only and provided that such copies are not made or distributed for profit or commercial use. All copies must be accompanied by this copyright notice and a full citation. Permission from the editor is required to make digital or printed copies of all or any part of this journal for profit or commercial use. Permission requests should be sent to Editor, JDFSL, 4350 Candlewood Lane, Ponce Inlet, FL 32127, or emailed to editor@jdfsl.org. ISSN 1558-7215

© 2017 ADFSL
Call for Papers

The Journal of Digital Forensics, Security and Law has an open call for papers in, or related to, the following subject areas:

1) Digital Forensics Curriculum
2) Cyber Law Curriculum
3) Information Assurance Curriculum
4) Digital Forensics Teaching Methods
5) Cyber Law Teaching Methods
6) Information Assurance Teaching Methods
7) Digital Forensics Case Studies
8) Cyber Law Case Studies
9) Information Assurance Case Studies
10) Digital Forensics and Information Technology
11) Law and Information Technology
12) Information Assurance and Information Technology

Guide for Submission of Manuscripts

Manuscripts should be submitted through the JDFSL online system in Word format using the following link: http://www.jdfsl.org/for-authors. If the paper has been presented previously at a conference or other professional meeting, this fact, the date, and the sponsoring organization should be given in a footnote on the first page. Articles published in or under consideration for other journals should not be submitted. Enhanced versions of book chapters can be considered. Authors need to seek permission from the book publishers for such publications. Papers awaiting presentation or already presented at conferences must be significantly revised (ideally, taking advantage of feedback received at the conference) in order to receive any consideration. Funding sources should be acknowledged in the Acknowledgements section.

The copyright of all material published in JDFSL is held by the Association of Digital Forensics, Security and Law (ADFSL). The author must complete and return the copyright agreement before publication. The copyright agreement may be found at http://www.jdfsl.org/for-authors.

Additional information regarding the format of submissions may be found on the JDFSL Web site at http://www.jdfsl.org/for-authors.
Contents

Call for Papers ........................................................................................................................................... 2
Guide for Submission of Manuscripts ......................................................................................................... 2
A Power Grid Incident Identification Based on Physically Derived Cyber-Event Detection .......................... 5
Travis Atkison, Nathan Wallace

File Type Identification – Computational Intelligence for Digital Forensics ........................................ 19
Konstantinos Karampidis, Giorgos Papadourakis

Forensic Cell Site Analysis: A Validation & Error Mitigation Methodology ........................................ 33
John B. Minor

Towards a More Representative Definition of Cyber Security ................................................................. 53
Daniel Schatz, Rabih Bashroush and Julie Wall

Applying a Contingency Framework to Digital Forensic Processes in Cloud Based Acquisitions ................ 75
Diane Barrett

SQL Injection: The Longest Running Sequel in Programming History ..................................................... 97
Matthew Horner and Thomas Hyslip

Signatures of Viber Secure Traffic ........................................................................................................... 109
M.A.K.Sudozai, N.Habib, S.Saleem, A.A.Khan

Protecting Digital Evidence Integrity and Preserving Chain of Custody ............................................... 121
Makhdoom Syed Muhammad Baqir Shah, Shahzad Saleem and Roha Zulqarnain

Subscription Information ............................................................................................................................... 131