Table of Contents

Preface .................................................................................................................................................. xvi

Section 1
Digital Evidence

Chapter 1
Providing Cryptographic Security and Evidentiary Chain-of-Custody with the Advanced
Forensic Format, Library, and Tools.................................................................................................. 1
Simson L. Garfinkel, Naval Postgraduate School & Harvard University, USA

Chapter 2
Voice Over IP: Privacy and Forensic Implications ............................................................................ 29
Jill Slay, University of South Australia, Australia
Matthew Simon, University of South Australia, Australia

Chapter 3
Volatile Memory Collection and Analysis for Windows Mission-Critical Computer Systems........ 42
Antonio Savoldi, University of Brescia, Italy
Paolo Gubian, University of Brescia, Italy

Chapter 4
Evidentiary Implications of Potential Security Weaknesses in Forensic Software........................ 60
Chris K. Ridder, Stanford University, USA

Section 2
Combating Internet-Based Crime

Chapter 5
Methods to Identify Spammers........................................................................................................ 72
Tobias Eggendorfer, Universität der Bundeswehr München, Germany
Chapter 6
Spam Image Clustering for Identifying Common Sources of Unsolicited Emails

Chengcui Zhang, University of Alabama at Birmingham, USA
Xin Chen, University of Alabama at Birmingham, USA
Wei-Bang Chen, University of Alabama at Birmingham, USA
Lin Yang, University of Alabama at Birmingham, USA
Gary Warner, University of Alabama at Birmingham, USA

Chapter 7
A Model Based Approach to Timestamp Evidence Interpretation

Svein Yngvar Willassen, Norwegian University of Science and Technology, Norway

Chapter 8
Conducting Forensic Investigations of Cyber Attacks on Automobile In-Vehicle Networks

Dennis K. Nilsson, Chalmers University of Technology, Sweden
Ulf E. Larson, Chalmers University of Technology, Sweden

Chapter 9
Dealing with Multiple Truths in Online Virtual Worlds

Jan Sablatnig, Technische Universität Berlin, Germany
Fritz Lehmann-Grube, Technische Universität Berlin, Germany
Sven Grottke, University of Stuttgart, Germany
Sabine Cikic, Technische Universität Berlin, Germany

Section 3
Content Protection through the Use of Extrinsic Data

Chapter 10
Locally Square Distortion and Batch Steganographic Capacity

Andrew D. Ker, Oxford University Computing Laboratory, UK

Chapter 11
Efficient Forensic Analysis for Anonymous Attack in Secure Content Distribution

Hongxia Jin, IBM Almaden Research Center, USA

Chapter 12
Protection of Digital Mammograms on PACSs Using Data Hiding Techniques

Chang-Tsun Li, University of Warwick, UK
Yue Li, University of Warwick, UK
Chia-Hung Wei, Ching Yun University, Taiwan
Chapter 13
Reversible and Blind Database Watermarking Using Difference Expansion

Gaurav Gupta, Macquarie University, Australia
Josef Pieprzyk, Macquarie University, Australia

Chapter 14
Medical Images Authentication through Repetitive Index Modulation Based Watermarking

Chang-Tsun Li, University of Warwick, UK
Yue Li, University of Warwick, UK

Section 4
Application of Pattern Recognition and Signal Processing Techniques to Digital Forensics

Chapter 15
Unexpected Artifacts in a Digital Photograph
Matthew J. Sorell, University of Adelaide, Australia

Chapter 16
Conditions for Effective Detection and Identification of Primary Quantization of Re-Quantized JPEG Images
Matthew J. Sorell, University of Adelaide, Australia

Chapter 17
Dynamic Structural Statistical Model Based Online Signature Verification
Yan Chen, Tsinghua University, China
Xiaoqing Ding, Tsinghua University, China
Patrick S. P. Wang, Northeastern University, USA

Chapter 18
Efficient Image Matching Using Local Invariant Features for Copy Detection
H. R. Chennamma, University of Mysore, India
Lalitha Rangarajan, University of Mysore, India
M. S. Rao, Indian Academy of Forensic Sciences, India

Chapter 19
Reliable Motion Detection, Location and Audit in Surveillance Video
Samaan Poursoltan, University of Adelaide, Australia
Matthew J. Sorell, University of Adelaide, Australia
Chapter 20
Cancellable Biometrics for On-Line Signature Recognition ...................................................... 290
  Emanuele Maiorana, Università degli Studi Roma TRE, Italy
  Patrizio Campisi, Università degli Studi Roma TRE, Italy
  Alessandro Neri, Università degli Studi Roma TRE, Italy

Compilation of References ........................................................................................................... 316

About the Contributors .................................................................................................................. 333

Index .............................................................................................................................................. 341