

Contents

Part I Cyber Defence & Critical National Infrastructure (CNI)

Critical National Infrastructure, C4ISR and Cyber Weapons in the Digital Age	3
Stefan Kendzierskyj and Hamid Jahankhani	
Cyberwarfare – Associated Technologies and Countermeasures	23
Nishan Chelvachandran, Stefan Kendzierskyj, Yelda Shah, and Hamid Jahankhani	
The Malicious Use of AI-Based Deepfake Technology as the New Threat to Psychological Security and Political Stability	37
Konstantin A. Pantserev	
Considerations for the Governance of AI and Government Legislative Frameworks	57
Nishan Chelvachandran, Sonja Trifuljesko, Karolina Drobotowicz, Stefan Kendzierskyj, Hamid Jahankhani, and Yelda Shah	
Part II Augmented Humanity & Digital Society	
Augmented Humanity: Data, Privacy and Security	73
Liam Naughton and Herbert Daly	
Consumer Awareness on Security and Privacy Threat of Medical Devices	95
Anthonia Sagay and Hamid Jahankhani	
Biohacking Capabilities and Threat/Attack Vectors	117
Jaime Ibarra, Hamid Jahankhani, and Jake Beavers	
Digital Twins for Precision Healthcare	133
Gabriela Ahmadi-Assalemi, Haider Al-Khateeb, Carsten Maple, Gregory Epiphaniou, Zhraa A. Alhaboby, Sultan Alkaabi, and Doaa Alhaboby	

5G Cybersecurity Vulnerabilities with IoT and Smart Societies	159
Yelda Shah, Nishan Chelvachandran, Stefan Kendzierskyj, Hamid Jahankhani, and Radovan Janoso	
Part III Technology of Cyber Attacks	
Blockchain, TTP Attacks and Harmonious Relationship with AI	179
Stefan Kendzierskyj and Hamid Jahankhani	
Protecting Privacy and Security Using Tor and Blockchain and De-anonymization Risks	199
Stilyan Petrov, Stefan Kendzierskyj, and Hamid Jahankhani	
Experimental Analyses in Search of Effective Mitigation for Login Cross-Site Request Forgery	233
Y. Shibuya, K. Mwitondi, and S. Zargari	
Attack Vectors and Advanced Persistent Threats	267
Sergio F. de Abreu, Stefan Kendzierskyj, and Hamid Jahankhani	
Artificial Intelligence in Protecting Smart Building's Cloud Service Infrastructure from Cyberattacks	289
Petri Vähäkainu, Martti Lehto, Antti Kariluoto, and Anniina Ojalainen	
Part IV Smart Societies and Data Exploitation	
Smart Distributed Ledger Technologies in Industry 4.0: Challenges and Opportunities in Supply Chain Management	319
Gregory Epiphaniou, Mirko Bottarelli, Haider Al-Khateeb, Nikolaos Th. Ersotelos, John Kanyaru, and Vinita Nahar	
Combating Domestic Abuse inflicted in Smart Societies	347
Joe Mayhew and Hamid Jahankhani	
Deep Convolutional Neural Networks for Forensic Age Estimation: A Review	375
Sultan Alkaabi, Salman Yussof, Haider Al-Khateeb, Gabriela Ahmadi-Assalemi, and Gregory Epiphaniou	
Secure Implementation of E-Governance: A Case Study About Estonia ..	397
Rodrigo Adeodato and Sina Pournouri	
Insider Threat	431
James Bore	