

# Contents

## Full Papers

Optimizing Traffic Enforcement: From the Lab to the Roads . . . . .	3
<i>Ariel Rosenfeld, Oleg Maksimov, and Sarit Kraus</i>	
Incentive Compatibility of Pay Per Last $N$ Shares in Bitcoin Mining Pools. . .	21
<i>Yevhen Zolotavkin, Julian Garcia, and Carsten Rudolph</i>	
Adaptivity in Network Interdiction . . . . .	40
<i>Bastián Bahamondes, José Correa, Jannik Matuschke, and Gianpaolo Oriolo</i>	
Efficient Rational Proofs for Space Bounded Computations . . . . .	53
<i>Matteo Campanelli and Rosario Gennaro</i>	
Game-Theoretical Analysis of PLC System Performance in the Presence of Jamming Attacks. . . . .	74
<i>Yun Ai, Manav R. Bhatnagar, Michael Cheffena, Aashish Mathur, and Artem Sedakov</i>	
Secure Sensor Design for Cyber-Physical Systems Against Advanced Persistent Threats . . . . .	91
<i>Muhammed O. Sayin and Tamer Başar</i>	
An Ultimatum Game Model for the Evolution of Privacy in Jointly Managed Content . . . . .	112
<i>Sarah Rajtmajer, Anna Squicciarini, Jose M. Such, Justin Semonsen, and Andrew Belmonte</i>	
The U.S. Vulnerabilities Equities Process: An Economic Perspective. . . . .	131
<i>Tristan Caulfield, Christos Ioannidis, and David Pym</i>	
A Stackelberg Game Model for Botnet Data Exfiltration . . . . .	151
<i>Thanh Nguyen, Michael P. Wellman, and Satinder Singh</i>	
Optimal Strategies for Detecting Data Exfiltration by Internal and External Attackers. . . . .	171
<i>Karel Durkota, Viliam Lisý, Christopher Kiekintveld, Karel Horák, Branislav Božanský, and Tomáš Pevný</i>	
Building Real Stackelberg Security Games for Border Patrols. . . . .	193
<i>Victor Bucarey, Carlos Casorrán, Óscar Figueroa, Karla Rosas, Hugo Navarrete, and Fernando Ordóñez</i>	

Strategic Defense Against Deceptive Civilian GPS Spoofing of Unmanned Aerial Vehicles . . . . .	213
<i>Tao Zhang and Quanyan Zhu</i>	
A Game Theoretical Model for Optimal Distribution of Network Security Resources . . . . .	234
<i>Ziad Ismail, Christophe Kiennert, Jean Leneutre, and Lin Chen</i>	
Game-Theoretic Goal Recognition Models with Applications to Security Domains . . . . .	256
<i>Samuel Ang, Hau Chan, Albert Xin Jiang, and William Yeoh</i>	
Manipulating Adversary’s Belief: A Dynamic Game Approach to Deception by Design for Proactive Network Security . . . . .	273
<i>Karel Horák, Quanyan Zhu, and Branislav Bošanský</i>	
A Stochastic Game-Theoretic Model for Smart Grid Communication Networks . . . . .	295
<i>Xiaobing He and Hermann de Meer</i>	
A Stackelberg Game and Markov Modeling of Moving Target Defense . . . . .	315
<i>Xiaotao Feng, Zizhan Zheng, Prasant Mohapatra, and Derya Cansever</i>	
Proactive Defense Against Physical Denial of Service Attacks Using Poisson Signaling Games . . . . .	336
<i>Jeffrey Pawlick and Quanyan Zhu</i>	
A Large-Scale Markov Game Approach to Dynamic Protection of Interdependent Infrastructure Networks . . . . .	357
<i>Linan Huang, Juntao Chen, and Quanyan Zhu</i>	
VIOLA: Video Labeling Application for Security Domains . . . . .	377
<i>Elizabeth Bondi, Fei Fang, Debarun Kar, Venil Noronha, Donnabell Dmello, Milind Tambe, Arvind Iyer, and Robert Hannaford</i>	
On the Economics of Ransomware . . . . .	397
<i>Aron Laszka, Sadegh Farhang, and Jens Grossklags</i>	
Deterrence of Cyber Attackers in a Three-Player Behavioral Game . . . . .	418
<i>Jinshu Cui, Heather Rosoff, and Richard S. John</i>	
Information Leakage Games . . . . .	437
<i>Mário S. Alvim, Konstantinos Chatzikokolakis, Yusuke Kawamoto, and Catuscia Palamidessi</i>	

Optimal Patrol Planning for Green Security Games  
with Black-Box Attackers . . . . . 458  
*Haifeng Xu, Benjamin Ford, Fei Fang, Bistra Dilkina,  
Andrew Plumpton, Milind Tambe, Margaret Driciru, Fred Wanyama,  
Aggrey Rwetsiba, Mustapha Nsubaga, and Joshua Mabonga*

**Short Papers**

Security Games with Probabilistic Constraints on the Agent’s Strategy . . . . . 481  
*Corine M. Laan, Ana Isabel Barros, Richard J. Boucherie,  
and Herman Monsuur*

On the Cost of Game Playing: How to Control the Expenses  
in Mixed Strategies . . . . . 494  
*Stefan Rass, Sandra König, and Stefan Schauer*

Dynamics of Strategic Protection Against Virus Propagation  
in Heterogeneous Complex Networks . . . . . 506  
*Yezekeael Hayel and Quanyan Zhu*

Three Layer Game Theoretic Decision Framework  
for Cyber-Investment and Cyber-Insurance . . . . . 519  
*Deepak K. Tosh, Iman Vakili, Sachin Shetty, Shamik Sengupta,  
Charles A. Kamhoua, Laurent Njilla, and Kevin Kwiat*

**Author Index** . . . . . 533



<http://www.springer.com/978-3-319-68710-0>

Decision and Game Theory for Security  
8th International Conference, GameSec 2017, Vienna,  
Austria, October 23-25, 2017, Proceedings  
Rass, S.; An, B.; Kiekintveld, C.; Fang, F.; Schauer, S.  
(Eds.)  
2017, XI, 534 p. 137 illus., Softcover  
ISBN: 978-3-319-68710-0