

# **1st International Conference on Information Security & Privacy 2015**

Procedia Computer Science Volume 78

Ghrce, India  
11 - 12 December 2015

**Editors:**

**Jibi Abraham  
Vishal Bhatnagar**

ISBN: 978-1-5108-2217-7

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© by Elsevier B.V.  
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact Elsevier B.V.  
at the address below.

Elsevier B.V.  
Radarweg 29  
Amsterdam 1043 NX  
The Netherlands

Phone: +31 20 485 3911  
Fax: +31 20 485 2457

<http://www.elsevierpublishingsolutions.com/contact.asp>

**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  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)



## Contents

Preface	
V. Bhatnagar, J. Abraim . . . . .	1
User Profiling for University Recommender System Using Automatic Information Retrieval	
S. Kanoje, D. Mukhopadhyay, S. Girase . . . . .	5
Performance Evaluation of Selection Methods of Genetic Algorithm and Network Security Concerns	
H.M. Pandey . . . . .	13
Multi-layer Defense Against Malware Attacks on Smartphone Wi-Fi Access Channel	
K. Sharma, B.B. Gupta . . . . .	19
Android Applications Repackaging Detection Techniques for Smartphone Devices	
S. Rastogi, K. Bhushan, B.B. Gupta . . . . .	26
Placement of Security Devices in Cloud Data Centre Network: Analysis and Implementation	
S.K. Majhi, S.K. Dhal . . . . .	33
Cluster Based Wireless Mobile Healthcare System for Physiological Data Monitoring	
S.B. Tambe, R.C. Thool, V.R. Thool . . . . .	40
Crowdsourcing Software Development: Many Benefits Many Concerns	
N. Hasteer, N. Nazir, A. Bansal, B.K. Murthy . . . . .	48
A Study on Security Vulnerability on Cloud Platforms	
S.K. Majhi, S.K. Dhal . . . . .	55
A Survey on Keypoint Based Copy-paste Forgery Detection Techniques	
A.D. Warbhe, R.V. Dharaskar, V.M. Thakare . . . . .	61
DDOS Attack Aware DSR Routing Protocol in WSN	
R. Upadhyay, U.R. Bhatt, H. Tripathi . . . . .	68
Energy Efficient Segmentation for Green FiWi Network	
U.R. Bhatt, N. Chouhan, R. Upadhyay . . . . .	75
Automated Discovery of Java Script Code Injection Attacks in PHP Web Applications	
S. Gupta, B.B. Gupta . . . . .	82
Adaptive Lossless Medical Image Watermarking Algorithm Based on DCT & DWT	
A. Mehto, N. Mehra . . . . .	88
Cryptanalysis of Zuhua Shao Key Authentication Scheme	
P. Kumaraswamy, C.V. Guru Rao, V. Janaki, K.V.T.K.N. Prashanth . . . . .	95
A Secure Authentication Scheme for RFID Systems	
P. Dass, H. Om . . . . .	100
Threat Modelling of Virtual Machine Migration Auction	
S.K. Majhi, S.K. Dhal . . . . .	107
On Privacy and Security in Social Media—A Comprehensive Study	
Senthil Kumar N., Saravanakumar K., Deepa K. . . . .	114
Privacy Preserving Unstructured Big Data Analytics: Issues and Challenges	
B.B. Mehta, U.P. Rao . . . . .	120
A Keyless Approach for RDH in Encrypted Images Using Visual Cryptography	
N. Ansari, R. Shaikh . . . . .	125
A Critical Analysis of Energy Efficient Virtual Machine Placement Techniques and its Optimization in a Cloud Computing Environment	
A. Choudhary, S. Rana, K.J. Matahai . . . . .	132
Efficient Keyword Search over Encrypted Cloud Data	
A. Meharwade, G.A. Patil . . . . .	139
Gesture Control Using Single Camera for PC	
N. Lalithamani . . . . .	146
Novel Framework for Efficient Data Transfer (EDT)	
K.K. Nagwanshi, M. Kumar, S.P. Dubey . . . . .	153
Detection of Moving Objects in Surveillance Video by Integrating Bottom-up Approach with Knowledge Base	
Aarthi R., Amudha J., Boomika K., A. Varrier . . . . .	160
Establishment of Light Weight Cryptography for Resource Constraint Environment Using FPGA	
C. Baskar, Balasubramaniyan C., Manivannan D. . . . .	165

Computation of Various QoS Parameters for FiWi Access Network R. Upadhyay, U.R. Bhatt, N. Chouhan, T. Sarsodia .....	172
Legal Issues in Secure Implementation of Bring Your Own Device (BYOD) M. Dhingra .....	179
Cascade Forward Back-propagation Neural Network Based Group Authentication Using (n, n) Secret Sharing Scheme S. Narad, P. Chavan .....	185
Issues in Achieving Complete Interoperability while Sharing Electronic Health Records S. Bhartiya, D. Mehrotra, A. Girdhar .....	192
Cryptic Mining for Automatic Variable Key Based Cryptosystem S. Prajapat, R.S. Thakur .....	199
Integrated ECC and Blowfish for Smartphone Security P. Patel, R. Patel, N. Patel .....	210
Triplicative Cipher Technique R. Johari, H. Bhatia, S. Singh, M. Chauhan .....	217
Critical Study of Performance Parameters on Distributed File Systems Using MapReduce M. Vaidya, S. Deshpande .....	224
Cellular Network Fraud & Security, Jamming Attack and Defenses R. Hiremath, M. Malle, P. Patil .....	233
Developing a Novel Technique for Face Liveness Detection S.L. Fernandes, G.J. Bala .....	241
Developing a Novel Technique to Match Composite Sketches with Images Captured by Unmanned Aerial Vehicle S.L. Fernandes, G.J. Bala .....	248
Boolean Signatures for Metamorphic Malware A.K. Ranjan, R. Ali, V. Kumar, M. Hosseinzadeh .....	255
Usability Determination Using Multistage Fuzzy System D. Gupta, A.K. Ahlawat .....	263
Cryptographic Key Protection in a Cryptoprocessor N. Rajitha, R. Sridevi .....	271
A Novel Algorithmic Approach for an Automatic Data Placement for NUMA Based Design J. Madarkar, V. Gopi Chand, P.V. Sai Kiran Reddy, H. Arora .....	276
A Review on the Various Security Techniques for VANETs A. Singh, S. Kad .....	284
A Current Study on the Limitations of Agile Methods in Industry Using Secure Google Forms A. Agrawal, Mohd. A. Atiq, L.S. Maurya .....	291
Empirical Analysis of Web Attacks D. Kaur, P. Kaur .....	298
Risk Weighted Social Trust Index for Online Social Networks J. Lalchandani, H.B. Sankaranarayanan .....	307
The Impact Assessment of IT Infrastructure on Information Security: A Survey Report A.K. Shrivastava .....	314
Respiratory Mask Selection and Leakage Detection System Based on Canny Edge Detection Operator M.A. Ingle, G.R. Talmale .....	323
Multimodal Fingerprint Spoof Detection Using White Light A. Balaji, Varun. H.S., Sikha. O.K. ....	330
Multilevel Secure RFID Based Object Tracking System A.C. Bapat, S.U. Nimbhorkar .....	336
Design and Implementation of Trust Based Approach to Mitigate Various Attacks in Mobile Ad hoc Network N.N. Dangare, R.S. Mangrulkar .....	342
Power & Load Aware Resource Allocation Policy for Hybrid Cloud R. Shankar Jha, P. Gupta .....	350
Adaptive Selection of Cryptographic Protocols in Wireless Sensor Networks Using Evolutionary Game Theory S. Arora, P. Singh, A. Ji Gupta .....	358
Advanced Automated Module for Smart and Secure City V.K. Solanki, S. Katiyar, V. BhashkarSemwal, P. Dewan, M. Venkatasen, N. Dey .....	367
A Multilayered Secure Scheme for Transmission of Sensitive Information Based on Steganalysis D.J. D'Souza, M.P. Abraham .....	375
A Review on Noisy Password, Voiceprint Biometric and One-Time-Password K.K. Kumbhare, K.V. Warkar .....	382
A Review on Security Related Aspects in Vehicular Adhoc Networks N. Kaur, S. Kad .....	387
Review on Detection and Mitigation of Sybil Attack in the Network A.M. Bhise, S.D. Kamble .....	395
Future Weather Forecasting Using Soft Computing Techniques S. Khajure, S.W. Mohod .....	402

Symmetric Key Encryption Technique: A Cellular Automata Based Approach in Wireless Sensor Networks S. Roy, J. Karjee, U.S. Rawat, D. Pratik N., N. Dey .....	408
Role of Diameter Based Protocol in Enhancing of New and Upcoming Technologies Vinay Kumar S.B., Prasanna Kumar C., B. Shahi, D. Jha, Monica B.V., Suresh Kumar C.P. ....	415
Optimal Cluster Head Selection Based Energy Efficient Technique for Defending Against Gray Hole and Black Hole Attacks in Wireless Sensor Networks S.P. Dongare, R.S. Mangrulkar .....	423
A Review over Genetic Algorithm and Application of Wireless Network Systems B. Shahi, S. Dahal, A. Mishra, Vinay Kumar S.B., Prasanna Kumar C. ....	431
Keyword Based Search and its Limitations in the Patent Document to Secure the Idea from its Infringement R. Kumar, R.C. Tripathi, V. Singh .....	439
Quality of Service Approach for IPS Using RSS and Directional Antenna A.D. Potgantwar, V. Wadhai. ....	447
Power and Fault Aware Reliable Resource Allocation for Cloud Infrastructure P. Gupta, S.P. Ghrera .....	457
Computationally Efficient Digital Image Forensic Method for Image Authentication A.D. Warbhe, R.V. Dharaskar, V.M. Thakare .....	464
Medicine Reminder and Monitoring System for Secure Health Using IOT S.V. Zanjali, G.R. Talmale .....	471
Survey on Algorithms for Efficient Cluster Formation and Cluster Head Selection in MANET M. Gavhale, P.D. Saraf. ....	477
A New Approach for Video Steganography Based on Randomization and Parallelization Sudeepa K.B., Raju K., Ranjan Kumar H.S., G. Aithal .....	483
A Survey of Virtual Machine Placement Techniques in a Cloud Data Center Z. Usmani, S. Singh, Senior Member IEEE .....	491
Neural Network Pattern Classification and Weather Dependent Fuzzy Logic Model for Irrigation Control in WSN Based Precision Agriculture A.G. Mohapatra, S.K. Lenka .....	499
Analysis of K-Means and K-Medoids Algorithm for Big Data P. Arora, Deepali, S. Varshney .....	507
SAMIKSHA - Sentiment Based Product Review Analysis System A. Potdar, P. Patil, R. Bagla, R. Pandey, N. Jadhav .....	513
Detection of Obfuscation in Java Malware R. Kumar, A.R. Essar Vaishakh .....	521
GPS Based Distributed Communication Protocol for Static Sensor Network (GDGP) M. Nighot, A. Ghatol .....	530
A Dynamic Data Replication in Grid System S. Warhade, P. Dahiwal, M.M. Raghuvanshi .....	537
Design and Analysis of Real Time Video Processing Based on DWT Architecture for Mobile Robots P.K. Naik, A. Tigadi, H. Guhilot, Vyasraj.T. ....	544
Sentence Boundary Detection for Marathi Language N. Wanjari, G.M. Dhopavkar, N.B. Zungre .....	550
A Novel Graph Centrality Based Approach to Analyze Anomalous Nodes with Negative Behavior R. Kaur, M. Kaur, S. Singh .....	556
Secret Sharing Based Visual Cryptography Scheme Using CMY Color Space A.V. Dahat, P.V. Chavan. ....	563
Crime Data Analysis Using Pig with Hadoop A. Jain, V. Bhatnagar .....	571
Mathematical Model of Security Framework for Routing Layer Protocol in Wireless Sensor Networks G.R. Pathak, S.H. Patil. ....	579
Anti-Hijack: Runtime Detection of Malware Initiated Hijacking in Android V. Gauri Shankar, G. Somani .....	587
A Probabilistic Gossip-based Secure Protocol for Unstructured P2P Networks A. Srivastava, P. Ahmad. ....	595
Modified MASK Algorithm for Image Encryption H.G. Wali, N.C. Iyer .....	603
Secure Localisation of Wireless Devices with Application to Sensor Networks Using Steganography A. Tondwalkar, P. Vinayakray-Jani .....	610
A Comprehensive Evaluation of Cryptographic Algorithms: DES, 3DES, AES, RSA and Blowfish P. Patil, P. Narayankar, D.G. Narayan, S.M. Meena .....	617
Hidden Biometric Security Implementation through Human Brain's Artificial Macro Structure S. Maheshwari, P. Choudhary .....	625
Fuzzy Logic Based Image Encryption for Confidential Data Transfer Using (2, 2) Secret Sharing Scheme H.M. Mudia, P.V. Chavan .....	632

Authorship Verification of Online Messages for Forensic Investigation S. Nirkhi, R.V. Dharaskar, V.M. Thakare . . . . .	640
Secure and Cost-effective Application Layer Protocol with Authentication Interoperability for IOT A.A. Chavan, M.K. Nighot . . . . .	646
Resolving Problems Based on Peer to Peer Network Security Issue's P. Wararkar, N. Kapil, V. Rehani, Y. Mehra, Y. Bhatnagar . . . . .	652
Optimal Path Selection Criteria for Multipath Optical Wireless Communication Link J. Dhore, A. Kharalkar, S. Gohane, P. Jumle . . . . .	660
Grouping the Executables to Detect Malwares with High Accuracy S.K. Sahay, A. Sharma . . . . .	667
Neural Network Approach to Iris Recognition in Noisy Environment K. Hajari, U. Gawande, Y. Golhar . . . . .	675
Tree Representation: Knowledge Discovery from Uncertain Data K. Swarupa Rani . . . . .	683
Orange Sorting by Applying Pattern Recognition on Colour Image J. Jhavar . . . . .	691
Image Bit Depth Plane Digital Watermarking for Secured Classified Image Data Transmission S. Khandare, U. Shrawankar . . . . .	698
UML Based Modeling for Data Aggregation in Secured Wireless Sensor Network S. Uke, R. Thool . . . . .	706
Exponential Simplification Using Euler's and Fermat's Theorem M. Mohan, M.K. Kavitha Devi, Jeevan Prakash V. . . . .	714
Effective Cache Management and Pollution Reduction for Online Privacy M. Joshi, U. Shrawankar . . . . .	722
A Review on Video Security Using Visual Cryptosystem A.B. Gadicha, M.V. Sarode . . . . .	729
Spectral Efficiency Improving Techniques in Mobile Femtocell Network: Survey Paper S.N. Tayade . . . . .	734
Employing Speeded Scaled Conjugate Gradient Algorithm for Multiple Contiguous Feature Vector Frames: An Approach for Traffic Density State Estimation P. Borkar, M.V. Sarode, L.G. Malik . . . . .	740
Transliteration of Secured SMS to Indian Regional Language K. Sapkal, U. Shrawankar . . . . .	748
A Survey on Scheduling Schemes with Security in Wireless Sensor Networks R. Mahidhar, A. Raut . . . . .	756
Multiple Applications Sharing for Effective Load Balancing in Secured Distributed Environment K. Kimmatkar, U. Shrawankar . . . . .	763
A Partition Based Novel Approach in AFIS for Forensics & Security A. Shrivastava, D.K. Srivastava . . . . .	771
Cyber Physical Systems & Public Utility in India: State of Art S.K. Majhi, G. Patra, S.K. Dhal . . . . .	777
Controlled Broadcast Protocol for Location Privacy in Mobile Applications B.N. Jagdale, J.W. Bakal . . . . .	782
Video Partitioning and Secured Keyframe Extraction of MPEG Video K.S. Thakre, A.M. Rajurkar, R.R. Manthalkar . . . . .	790
A Novel Approach for Fault Tolerance Control System and Embedded System Security T.S. Khadse, S.P. Karmore . . . . .	799
Text Mining Using Metadata for Generation of Side Information S.S. Bhanuse, S.D. Kamble, S.M. Kakde . . . . .	807
Authorized Deduplication: An Approach for Secure Cloud Environment V. Waghmare, S. Kapse . . . . .	815
Comparative Analysis of Authenticated Key Agreement Protocols Based on Elliptic Curve Cryptography S. Nimbhorkar, L. Malik . . . . .	824
Dependency Analysis for Secured Code Level Parallelization V. Jagtap, U. Shrawankar . . . . .	831
Appropriate Channel Selection for Data Transmission in Cognitive Radio Networks M.S. Moon, V. Gulhane . . . . .	838
Information Retrieval System and Machine Translation: A Review M. Madankar, M.B. Chandak, N. Chavhan . . . . .	845
New Approach for Testing and Providing Security Mechanism for Embedded Systems S.P. Karmore, A.R. Mahajan . . . . .	851
Selective & Secured Code Distribution Approach for Multihop Wireless Sensor Networks V. Gulhane, L. Malik . . . . .	859