Sixteenth Annual IFIP WG 11.9 International Conference on Digital Forensics
Eros Hotel, Nehru Place, New Delhi, India
January 6-8, 2020

January 5, 2020 (Sunday)

07:15pm - 09:00pm: Dinner (Hotel guests only)
Meet in the Hotel Lobby @ 06:45pm to walk to the restaurant

January 6, 2020 (Monday)

07:30am - 08:45am: Breakfast (Eros Hotel, Nehru Place; Hotel guests only)

09:00am - 09:10am: Welcoming Remarks and Logistics

09:10am - 09:40am: Keynote Lecture
Digital Forensics – The Way Forward
Dr. Sanjay Bahl, Director General, CERT-In, Government of India, New Delhi, India

09:40am - 10:00am: Keynote Lecture
The Future of the Digital Forensic Ecosystem
Gaurav Gupta, Additional Director/Scientist E, Ministry of Electronics and Information Technology, New Delhi, India

10:00am - 11:00am: Session 1: Themes and Issues I
Chair: Somitra Sanadhya, Indian Institute of Technology Ropar, Rupnagar, India

Digital Forensics and the Big Data Deluge – Concerns Based on Ramsey Theory
Martin Olivier
University of Pretoria, Pretoria, South Africa

Legal and Ethical Issues Involved in Handling Digital Evidence – The Indian Perspective
Kala Baskar and Mahesh Balakrishnan
University of Madras, Chennai, India

11:00am - 11:20am: Break

11:20am - 12:50pm: Session 2: Advanced Forensic Techniques I
Chair: Martin Olivier, University of Pretoria, Pretoria, South Africa

A Digital Media Similarity Measure for Triaging Digital Evidence
Myeong Lim and James Jones
George Mason University, Fairfax, Virginia, USA

Insider Threat Detection Using Multi-Autoencoder-Filtered Unsupervised Learning
Yichen Wei and Kam-Pui Chow
University of Hong Kong, Hong Kong, China

Real-Time Data Leakage Detection on the Local Side
Jingcheng Liu, Yaping Zhang, Yuze Li, Yongheng Jia, Yao Chen and Jing Cao
Tianjin University, Tianjin, China

12:50pm - 01:20pm: Sponsor Presentation I: Ernst and Young, Mumbai, India

01:20pm - 02:15pm: Lunch (Eros Hotel, Nehru Place)

January 6, 2020 (Monday) (continued)

02:15pm - 03:15pm: Session 3: Digital Forensic Investigations I
Chair: Kam-Pui Chow, University of Hong Kong, Hong Kong, China

A Novel Approach for Generating Synthetic Data Sets for Digital Forensics
Thomas Göbel, Thomas Schäfer, Julien Hachenberger, Jan Türr and Harald Baier
Darmstadt University of Applied Sciences, Darmstadt, Germany
Fraunhofer Institute for Secure Information Technology, Darmstadt, Germany

Interactive Temporal Analysis for Improved Digital Forensics Event Reconstruction
Nikolai Adderley and Gilbert Peterson
Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

03:15pm - 04:15pm: Session 4: Digital Forensic Investigations II
Chair: Michael Losavio, University of Louisville, Louisville, Kentucky, USA

Information Sharing for Effective Digital Forensic Investigations
Jaehyeok Han, Jieon Kim and Sangjin Lee
Korea University, Seoul, South Korea

Forensic Analysis of Advanced Persistent Threat Attacks in Cloud Environments
Changwei Liu, Anoop Singhal and Duminda Wijesekera
George Mason University, Fairfax, Virginia, USA
National Institute of Standards and Technology, Gaithersburg, Maryland, USA

04:15pm - 05:15pm: Break and Poster Session
Chair: Kala Baskar, University of Madras, Chennai, India

Using the Python Audio Analysis Library for Deep Analysis of Signal Homogeneity in an Audio Sample
Mohit Soni, Zakarriya Hassan Abdullahi, Nidhi Sagarwal and Moinuddin Mondal
Lovely Professional University, Phagwara, India
Hussain Adamu Federal Polytechnic, Jigawa, Nigeria
SGTB Khalsa College – Delhi University, New Delhi, India

Unraveling Security Features for Counterfeit Currency Detection
Saheb Chhabra, Pulkit Garg, Garima Gupta and Gaurav Gupta
Indraprastha Institute of Information Technology Delhi, New Delhi, India
University of Delhi, New Delhi, India
Ministry of Electronics and Information Technology, New Delhi, India

A Trustworthy Forensic Investigation Framework for Vehicular Fog Computing
Mohammad Aminul Hoque, Raiful Hasan, Shohrab Hossain and Ragib Hasan
University of Alabama at Birmingham, Birmingham, Alabama, USA
Bangladesh University of Engineering and Technology, Dhaka, Bangladesh

A Proactive Readiness Model for Internet of Things Forensics
Lakshminarayana Sadineni, Emmanuel Pilli and Ramesh Babu Battula
Malaviya National Institute of Technology, Jaipur, India

Innovative Quick Response Codes for Secure Forensic Solutions
Naman Banati, Saheb Chhabra, Garima Gupta and Gaurav Gupta
Netaji Subhas University of Technology, New Delhi, India
Indraprastha Institute of Information Technology Delhi, New Delhi, India
Ministry of Electronics and Information Technology, New Delhi, India

Metadata Analysis Using an Attribute-Similarity-Associative Parameter Model
Ashok Kumar Mohan and Sethumadhavan Madathil
Amrita School of Engineering, Coimbatore, India

05:15pm - 05:45pm: Business Meeting

07:15pm - 09:00pm: Dinner (Hotel guests only)
Meet in the Hotel Lobby @ 06:45pm to walk to the restaurant

January 7, 2020 (Tuesday)

07:30am - 08:45am: Breakfast (Eros Hotel, Nehru Place; Hotel guests only)

09:00am - 09:30am: Keynote Lecture
Digital Forensics in India
Lt. Gen. (Retd.) Rajesh Pant, National Cyber Security Coordinator, National Security Council Secretariat, Government of India, New Delhi, India

09:30pm - 10:30am: Session 5: Themes and Issues II
Chair: Duminda Wijesekera, George Mason University, Fairfax, Virginia, USA

Identity and Sufficiency in Digital Evidence Pertaining to Online Misconduct
Michael Losavio, Pavel Pastukov and Svetlana Polyakova
University of Louisville, Louisville, Kentucky, USA
Perm State University, Perm, Russia

Public Opinion Monitoring Using Named Entity Recognition
Wencan Wu, Kam-Pui Chow, Yonghao Mai and Jun Zhang
University of Hong Kong, Hong Kong, China
Hubei Police University, Wuhan, China

10:30am - 11:00am: Sponsor Presentation II: Cellebrite Asia Pacific, Singapore

11:00am - 11:30am: Break

11:30am - 12:30pm: Session 6: Device Forensics
Chair: Gaurav Gupta, Ministry of Electronics and Information Technology, New Delhi, India

Forensic Analysis of E-Dating Applications Based on iPhone Backups
Ranul Thantilage and Nhien An Le Khac
University College Dublin, Dublin, Ireland

Tracking Digital Forensic Trails in Internet of Things Devices
Kala Baskar
University of Madras, Chennai, India

12:30pm - 01:30pm: Session 7: Advanced Forensic Techniques II
Chair: Thomas Göbel, Darmstadt University of Applied Sciences, Darmstadt, Germany

Detecting Attacks in a Water Treatment System Using a One-Class Support Vector Machine
Kwai-Keung Yau, Kam-Pui Chow and Siu-Ming Yiu
University of Hong Kong, Hong Kong, China

Extending the Feature Profile of Web Shell by Analyzing the Performance of Multiple Detectors
Weiqing Huang, Chenggang Jia, Min Yu, Kam-Pui Chow, Jiuming Chen, Chao Liu and Jianguo Jiang
University of the Chinese Academy of Sciences, Beijing, China
University of Hong Kong, Hong Kong, China

01:30pm - 02:15pm: Lunch (Eros Hotel, Nehru Place)

02:15pm - 03:15pm: Session 8: Forensic Tools and Techniques
Chair: Sujeet Shenoi, University of Tulsa, Tulsa, Oklahoma, USA

A Taxonomy of Hypervisor Forensic Tools
Anand Kumar Mishra, Mahesh Govil and Emmanuel Pilli
Malaviya National Institute of Technology, Jaipur, India

Resident Data Pattern Analysis Using Sector Clustering for Storage Drive Forensics
Nitesh Bharadwaj, Upasna Singh and Gaurav Gupta
Indian Institute of Information Technology, Bhopal, India
Defence Institute of Advanced Technology, Pune, India
Ministry of Electronics and Information Technology, New Delhi, India

03:15pm - 03:45pm: Sponsor Presentation III: 3rd Eye Techno Solutions, New Delhi, India

January 7, 2020 (Tuesday) (continued)

03:45pm - 04:15pm: Sponsor Presentation IV: Forenso Digital Technologies, Karnal, India

04:15pm - 04:40pm: Break

04:40pm - 06:10pm: Session 9: Multimedia Forensics
Chair: Emmanuel Pilli, Malaviya National Institute of Technology, Jaipur, India

Applications of Google Map Location History Artifacts in Digital Forensic Investigations
Archit Gaur, Aish Kanodia, Himanshu Panwar, Nitesh Bharadwaj and Gaurav Gupta
Indian Institute of Information Technology, Bhopal, India
Ministry of Electronics and Information Technology, New Delhi, India

Electric Network Frequency Based Audio Forensics Using Convolutional Neural Networks
Maoyu Mao, Zhongcheng Xiao, Xiangui Kang, Xiang Li and Liang Xiao
Sun Yat-Sen University, Quangzhou, China
Hainan University, Haikou, China
Xiamen University, Xiamen, China

Target Identity Generation to Fool Facial Recognition Systems
Saheb Chhabra, Pulkit Garg, Naman Banati, Gaurav Gupta and Garima Gupta
Indraprastha Institute of Information Technology Delhi, New Delhi, India
University of Delhi, New Delhi, India
Netaji Subhas University of Technology, New Delhi, India
Ministry of Electronics and Information Technology, New Delhi, India

07:15pm - 09:00pm: Dinner (Hotel guests only)
Meet in the Hotel Lobby @ 06:45pm to walk to the restaurant

January 8, 2020 (Wednesday)

07:30am - 08:45am: Breakfast (Eros Hotel, Nehru Place; Hotel guests only)

09:00am - 10:00am: Law Enforcement Lecture
Handling Cyber Crimes Using a Public-Private Partnership Model
Venkatesh Murthy, Director, Data Security Council of India, Bangalore, India

10:00am - 11:15am: Law Enforcement Lecture
Case Studies in Invasive Embedded Device Forensics: Data Extraction and Firmware Assurance
Sujeet Shenoi, Professor of Computer Science and Chemical Engineering, University of Tulsa, Tulsa, Oklahoma, USA

11:15am - 11:30am: Break

11:30am - 12:30pm: Law Enforcement Lecture
Innovative Tools for Enhancing the Efficiency of Digital Forensic Investigations
Gaurav Gupta, Additional Director/Scientist E, Ministry of Electronics and Information Technology, New Delhi, India

12:30pm - 01:30pm: Lunch (Eros Hotel, Nehru Place)

01:30pm - 02:15pm: Law Enforcement Lecture
CopConnect – An Exclusive Mobile App for Law Enforcement
Rajshekhar Pullabhatla, Director, Information Sharing and Analysis Center, Chennai, India

02:15pm - 03:00pm: Law Enforcement Lecture
Legal Challenges in Digital Forensics
Vakul Sharma, Advocate, New Delhi, India

03:00pm - 03:20pm: Break

03:20pm - 04:00pm: Law Enforcement Lecture
State-of-the-Art Mac Forensics
Manoj Kumar, Subject Matter Expert, Forenso Digital Technologies, Karnal, India

04:00pm - 05:00pm: Law Enforcement Lecture
Deep Fake Investigations
Richa Singh, Professor of Computer Engineering, Indian Institute of Technology Jodhpur, Karwar, India
Mayank Vatsa, Professor of Computer Engineering, Indian Institute of Technology Jodhpur, Karwar, India