# Fifteenth Annual IFIP WG 11.9 International Conference on Digital Forensics
## Orlando, Florida
## January 28-29, 2019

## January 27, 2019 (Sunday)

**06:00pm - 08:30pm:  Dinner (High Tide Harry's, 4645 S. Semoran Boulevard; Tel: (407) 273-4422)**
**Meet in Hotel Lobby @ 05:15pm for Car Pooling**

## January 28, 2019 (Monday)

**06:30am - 07:45am:  Breakfast (Holiday Inn Orlando East – UCF Area)**

**08:00am - 08:15am:  Welcoming Remarks and Logistics**

**08:15am - 09:15am:  Keynote Lecture**
*Current Issues in Law Enforcement Digital Evidence*
Investigator Sara Klein, Digital Forensics Unit, Seminole County Sheriff's Office, Sanford, Florida, USA

**09:15am - 10:15am:  Session 1:  Digital Forensic Models**
Chair: Gilbert Peterson, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA

*A Holistic Forensic Model for the Internet of Things*
Lakshminarayana Sadineni, Emmanuel Pilli and Ramesh Babu
Malaviya National Institute of Technology, Jaipur, India

*Implementing the Harmonized Model for Digital Evidence Admissibility Assessment*
Albert Antwi-Boasiako and Hein Venter
e-Crime Bureau, Accra, Ghana
University of Pretoria, Pretoria, South Africa

**10:15am - 10:30am:  Break**

**10:30am - 12:00pm:  Session 2:  Mobile Device Forensics**
Chair: Stefan Axelsson, Halmstad University, Halmstad, Sweden

*Retrofitting Mobile Devices for Capturing Memory-Resident Malware Based on System Side-Effects*
Zachary Grimmett, Jason Staggs and Sujeet Shenoi
University of Tulsa, Tulsa, Oklahoma, USA

*Classifying the Authenticity of Evaluated Smartphone Data*
Heloise Pieterse, Martin Olivier and Renier van Heerden
University of Pretoria, Pretoria, South Africa
Council for Scientific and Industrial Research, Pretoria, South Africa
Nelson Mandela University, Port Elizabeth, South Africa

# January 28, 2019 (Monday) (continued)

*Design and Implementation of a Targeted Data Extraction System for Mobile Devices*
Sudhir Aggarwal, Gokila Dorai, Umit Karabiyik, Tathagata Mukherjee, Nicholas Guerra, Manuel Hernandez, James Parsons, Khushboo Rathi, Hongmei Chi, Temilola Aderibigbe and Rodney Wilson
Florida State University, Tallahassee, Florida, USA
Purdue University, West Lafayette, Indiana, USA
University of Alabama, Huntsville, Alabama, USA
University of Tulsa, Tulsa, Oklahoma, USA
Sam Houston State University, Huntsville, Texas, USA
Florida A&M University, Tallahassee, Florida, USA

**12:15pm - 01:15pm:  Lunch (Golden Corral, 11731 E. Colonial Drive; Tel: (407) 902-2979)**

**01:30pm - 02:30pm:  Session 3:  Forensic Techniques I**
Chair: Raymond Chan, Singapore Institute of Technology, Singapore

*Analyzing Windows Subsystems for Linux Metadata to Detect Timestamp Forgery*
Bhupendra Singh and Gaurav Gupta
Indian Institute of Information Technology, Pune, India
Ministry of Electronics and Information Technology, New Delhi, India

*Creating a Map of User Data in NTFS to Improve File Carving*
Martin Karresand, Asalena Warnqvist, David Lindahl, Stefan Axelsson and Geir Olav Dyrkolbotn
Norwegian University of Science and Technology, Gjovik, Norway
Swedish National Forensic Centre, Linkoping, Sweden
Swedish Defence Research Agency, Linkoping, Sweden

**02:30pm - 02:45pm:  Break**

**02:45pm - 03:45pm:  Session 4:  Advanced Forensic Techniques**
Chair: Martin Olivier, University of Pretoria, Pretoria, South Africa

*Forensic Atomic Force Microscopy of Semiconductor Memory Arrays*
Struan Gray and Stefan Axelsson
Halmstad University, Halmstad, Sweden
Norwegian University of Science and Technology, Gjovik, Norway

*Programmable Logic Controller Anomaly Detection Using Unsupervised Machine Learning*
Chun-Fai Chan, Kam-Pui Chow, Cesar Mak and Raymond Chan
University of Hong Kong, Hong Kong, China
Singapore Institute of Technology, Singapore

**03:45pm - 04:45pm:  IFIP WG 11.9 Business Meeting/2020 IFIP WG 11.9 Conference**

**06:30pm - 08:30pm:  Dinner (Smokey Bones, 303 N. Alafaya Trail; Tel: (407) 249-2009)**
**Meet in Hotel Lobby @ 06:15pm for Car Pooling**

# January 29, 2019 (Tuesday)

**06:30am - 07:45am:  Breakfast (Holiday Inn Orlando East – UCF Area)**

**08:00am - 09:15am:  Keynote Lecture**
*Case Studies in Invasive Digital Forensics*
Sujeet Shenoi, University of Tulsa, Tulsa, Oklahoma, USA

**09:15am - 10:15am:  Session 5:  Image Forensics**
Chair: Sudhir Aggarwal, Florida State University, Tallahassee, Florida, USA

*Quick Response Encoding of Human Faces for Identity Fraud Detection*
Shweta Singh, Saheb Chhabra, Garima Gupta, Monika Gupta and Gaurav Gupta
Maharishi Dayanand University, Rohtak, India,
Indian Institute of Information Technology, Pune, India
Ministry of Electronics and Information Technology, New Delhi, India
Miranda House, Delhi University, New Delhi, India
Defence Institute of Advanced Technology, Pune, India

*A Neural-Network-Based Method for Fake Colorized Image Detection*
Yuze Li, Yaping Zhang, Liangfu Lu, Yongheng Jia and Jingcheng Liu
Tianjin University, Tianjin, China

**10:15am - 10:30am:  Break**

**10:30am - 12:00pm:  Session 6:  Forensic Techniques II**
Chair: Gaurav Gupta, Ministry of Electronics and Information Technology, New Delhi, India

*Timeline Visualization of Keywords*
Wynand van Staden
University of South Africa, Johannesburg, South Africa

*Brute Forcing Vendor Defined Messages in the USB Power Delivery Protocol*
Gunnar Alendal, Stefan Axelsson and Geir Olav Dyrkolbotn
Halmstad University, Halmstad, Sweden
Norwegian University of Science and Technology, Gjovik, Norway

*Determining the Forensic Data Requirements for Detecting Hypervisor Attacks*
Changwei Liu, Anoop Singhal, Ramaswamy Chandramouli and Duminda Wijesekera
George Mason University, Fairfax, Virginia, USA
National Institute of Standards and Technology, Gaithersburg, Maryland, USA

**12:15pm - 01:15pm:  Lunch (Golden Corral, 11731 E. Colonial Drive; Tel: (407) 902-2979)**