

DIGITAL & MULTIMEDIA SCIENCES

Thursday

What Happened Last Night?—Audio, Video, and Image Analysis

Moderator: J. Levi White

Co-Moderator: Umit Karbiyik

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| 8:30 AM – 8:50 AM | C1 | A Lossy Compression Analysis of GoPro® Audios Before and After YouTube Laundry
<i>Stephen Wells, MSc*; Catalin Grigoras, PhD; Gregory Wales, MSc; Cole Whitecotton, MSc</i> |
| 8:50 AM – 9:10 AM | C2 | Can You Accurately Determine Clothing Tones in Infrared Closed-Circuit Television (CCTV) Imagery?
<i>Cole Whitecotton, MSc; Gretchel Lomboy, MS*; James Zjalic, MSc</i> |
| 9:10 AM – 9:30 AM | C3 | Digital Reality: Light Reflection vs. Gunfire Muzzle Flashes
<i>Barry Dickey*; Gil Sapir, JD, MSc</i> |
| 9:30 AM – 9:50 AM | C4 | An Investigation of Closed-Circuit Television (CCTV) Footage for the Detection of Facial Features
<i>Lovepreet Kaur, MSc*; Mukesh Thakar, PhD; Navdeep Goel, PhD</i> |
| 9:50 AM – 10:00 AM | | BREAK |

It Wasn't Me! I Swear, I Didn't Know!—Identification, Verification, and Age Estimation

Moderator: Patrick Eller

Co-Moderator: Irfan Ahmed

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| 10:00 AM – 10:25 AM | C5 | An Overview of Facial Identification as a Forensic Discipline
<i>Steven Johnson, BS*</i> |
| 10:25 AM – 10:45 AM | C6 | The Application of TPS Software in Ear Print Identification: Matching/Non-Matching of the Ear Photograph and Ear Print
<i>Deepika Rani, MSc*; Kewal Krishan, PhD</i> |
| 10:45 AM – 11:05 AM | C7 | Exploring Bias in Estimating the Age of Subadults in Images
<i>Petra Urbanova, PhD*</i> |
| 11:05 AM – 11:25 AM | C8 | Multimedia Stream Hashing: A Forensic Method for Content Validation and Verification
<i>Gregory Wales, MSc*; Jeff Smith, MS*; Douglas Lacey, MS*; Catalin Grigoras, PhD</i> |
| 11:25 AM – 11:45 AM | C9 | Source Camera Identification on Multi-Camera Phones
<i>Stephanie Reinders, PhD*; Danica Ommen, PhD; Alicia Carriquiry, PhD</i> |
| 11:45 AM – 1:00 PM | | BREAK |

DIGITAL & MULTIMEDIA SCIENCES

No More Secrets—Social Networking and Mobile Device Analysis

Moderator: Alexander Nelson

Co-Moderator: Gregory Wales

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| 1:00 PM – 1:20 PM | C10 | A Forensic Analysis of Android™-Popular Social Networking Apps
<i>Chen Shi, PhD*</i> ; <i>Yong Guan, PhD</i> |
| 1:20 PM – 1:40 PM | C11 | TikTok From an Open-Source Intelligence (OSINT) Perspective: Lessons Learned
<i>Marcus Rogers, PhD*</i> ; <i>Nina Matulis, BS</i> |
| 1:40 PM – 2:05 PM | C12 | The Analysis of Sysdiagnose in iOS® 15 to Identify the Sending Phone Number of Airdrop Data
<i>Brandon Epstein, MS*</i> ; <i>Benjamin Klein, BA*</i> ; <i>Derek Feuerstein, BS*</i> |
| 2:05 PM – 2:25 PM | C13 | Cyber Forensic Investigations of Web3 Cryptocurrency Wallets on iOS® and Android™
<i>Mohammad Meraj Mirza, MS*</i> ; <i>Akif Ozer*</i> ; <i>Umit Karabiyik, PhD</i> |
| 2:25 PM – 2:35 PM | | BREAK |

Yes, More Secrets—Cryptography, Memory, and Hidden Data

Moderator: Andrew Crouse

Co-Moderator: Mary Adedayo

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| 2:35 PM – 2:55 PM | C14 | Cryptographic Techniques in Digital Forensics
<i>Taiwo Ogunseyi, PhD*</i> ; <i>Oluwasola Adedayo, PhD*</i> |
| 2:55 PM – 3:20 PM | C15 | Leveraging Memory Forensics Artifacts for Android™ Malware Classification
<i>Aisha Ali-Gombe, PhD*</i> ; <i>Sneha Sudhakaran, PhD</i> ; <i>Golden Richard, PhD</i> |
| 3:20 PM – 3:45 PM | C16 | Going Beyond Forensics With Virtual Private Network (VPN) Application Fingerprinting
<i>Shinelle Hutchinson*</i> ; <i>Blake Anderson, PhD</i> ; <i>Umit Karabiyik, PhD</i> ; <i>David McGrew, PhD</i> |
| 3:45 PM – 4:05 PM | C17 | Unlocking the Audit Trail of an Unsupported Programmable Deadbolt Lock
<i>Nicole Odom, MSFS*</i> |
| 4:05 PM – 4:45 PM | C18 | WITHDRAWN |

Poster Session

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| 11:30 AM – 1:00 PM | C19 | Facial Recognition Searches Using Postmortem Images
<i>Ella Uren, BS*</i> ; <i>Kelcy McArthur, MA*</i> ; <i>Krystal Howard, MSW</i> ; <i>Jennifer Coulson, BA</i> ;
<i>Jane Harris, PhD</i> |
| 11:30 AM – 1:00 PM | C20 | A Likelihood Ratio Approach for Detecting Behavioral Changes in Device Usage Over Time
<i>Rachel Longjohn, MS*</i> ; <i>Padhraic Smyth, PhD</i> |
| 11:30 AM – 1:00 PM | C21 | Artificial Intelligence Technologies in Age Estimation: The State-of-the-Art
<i>Salvatore Rocuzzo, MD*</i> ; <i>Aldo Liberto, MD</i> ; <i>Elisa Pappalardo, MD</i> ; <i>Sabrina Franco, MD</i> ;
<i>Mario Chisari, MD</i> ; <i>Massimiliano Esposito, MD</i> |

DIGITAL & MULTIMEDIA SCIENCES

Friday

And Boom Goes the (Dynamite) Data Explosion—Data Sets, Databases, and Forensic Tool Testing

Moderator: Jason Lewis

Co-Moderator: Cole Whitecotton

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| 8:45 AM – 9:05 AM | C22 | Computer Forensics Reference Data Sets (CFReDS) for Digital Evidence
<i>Rick Ayers, MS; Mehdi Shahid, MS; Barbara Guttman, BA*</i> |
| 9:05 AM – 9:25 AM | C23 | The Discovery of Digital Forensic Dataset Characteristics With CASE-Corpora
<i>Alex Nelson, PhD*; Eoghan Casey, PhD</i> |
| 9:25 AM – 9:45 AM | C24 | Manipulating the National Institute of Standards and Technology (NIST) National Software Reference Library SQLite Metadata Sets
<i>Douglas White, MS*; Austin Snelick, BS*</i> |
| 9:45 AM – 10:10 AM | C25 | Computer Forensics Tool Testing (CFTT) Cloud Artifact Extraction Tools
<i>James Lyle, PhD*; Richard Ayers, MS; Barbara Guttman, BA</i> |
| 10:10 AM – 10:20 AM | | BREAK |

All You Need Is (Love) Standards, Policies, and Procedures

Moderator: Thomas Moore

Co-Moderator: Gary Daniel

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| 10:20 AM – 10:40 AM | C26 | Standards Development Activities in Digital and Multimedia Forensic Sciences
<i>Tracy Walraven, MFS*</i> |
| 10:40 AM – 11:00 AM | C27 | Escaping the Monolithic Architecture for Digital Forensics and Incident Response Systems Using a Microservices Approach
<i>Mohammad Meraj Mirza, MS*; Rwitam Bandyopadhyay, BS; Akif Ozer; Bharath Vemula, MS; Umit Karabiyik, PhD*; Marcus Rogers, PhD*</i> |
| 11:00 AM – 11:25 AM | C28 | Disambiguating “Ground Truth” for Forensic Applications in Artificial Intelligence
<i>Cristina Aggazzotti, PhD*; E. Allyn Smith, PhD*</i> |
| 11:25 AM – 11:45 AM | C29 | Comparing Defense Attorneys’ and Prosecutors’ Knowledge of Digital Evidence
<i>Danielle Crimmins, PhD*; Kathryn Seigfried-Spellar, PhD; Marcus Rogers, PhD</i> |
| 11:45 AM – 1:05 PM | | BREAK |

DIGITAL & MULTIMEDIA SCIENCES

Multidisciplinary Session: Digital & Multimedia Sciences and Engineering & Applied Sciences The Next 75 Years—The Application of Technology/DMS to the Forensic Sciences

Moderator: *J. Levi White*

Co-Moderator: *Christina Malone*

1:05 PM – 1:30 PM	C30	The Possibilities of Artificial Intelligence in Digital and Multimedia Sciences AI4Forensics <i>Zeno Geradts, PhD*</i>
1:30 PM – 1:50 PM	C31	The Implementation and Testing of Triplet Convolutional Neural Networks for Forensic Image Matching: Phase I—Setting Up the Algorithm <i>Brahmani Reddy Aileni, BS; Sharon Derrick, PhD*; Ruby Mehrubeoglu, PhD</i>
1:50 PM – 2:10 PM	D37	On-Board Video Analysis Is Used to Defend a Truck Operator in the Case of a Pedestrian Killed in the Crosswalk <i>Kurt Weiss, MS*</i>
2:10 PM – 2:30 PM	D38	Research on the Deep Learning-Based Arc Melting Mark Detection Technique <i>Lim Kyu-Young, MS*</i>
2:30 PM – 2:50 PM	D39	Video Analysis Helps Defend Municipality in Bicyclist’s Impact With a Truck <i>Kurt Weiss, MS*</i>
2:50 PM – 3:00 PM		BREAK
3:00 PM – 3:20 PM	C32	A Universal Disaster Victim Identification Digital Tool for the Management of Fragmented Cross-Jurisdictional Missing Persons’ Lists and Antemortem Data in Mass Disasters With Multinational Victims <i>Shada Alsalamah, PhD*; Afrah Alotaibi, MSc; Sakher Al-Qahtani, PhD*</i>
3:20 PM – 3:40 PM	C33	Augmented Reality Applications for Craniofacial Reconstruction and Fracture Margin Assessment in Forensic Anthropology <i>Katharine Kolpan, PhD*; Jeffrey Vadala, PhD</i>
3:40 PM – 4:00 PM	D40	Forensic Human Identification From Facial and Cranial Images Using Deep Learning <i>Mario Villar, BS; Andrea Valsecchi, PhD; Pablo Mesejo, PhD*</i>
4:00 PM – 4:20 PM	C34	Potentialities of the Anatomage Table in Forensic Training and Education Programs <i>Emilio Nuzzolese, PhD*; Corrado Calì, PhD; Giancarlo Di Vella, PhD</i>