

# DIGITAL & MULTIMEDIA SCIENCES

## Thursday

### Poster Session

11:30 am—1:00 pm	<b>C1</b>	<b>WITHDRAWN</b>
11:30 am—1:00 pm	<b>C2</b>	<b>CrimeEye: A Deep Learning Approach to Suspect Identification From Low-Resolution CCTV Footage</b> Abhishek Kumar Singh, BEng*; Navdha Bhardwaj, MSc
11:30 am—1:00 pm	<b>C3</b>	<b>The Role of Digital Forensics in Identifying Identity Theft</b> Oreoluwa Ladoja, MSc*; Ashraf Mozayani, PharmD; Jasmine Drake, PhD

### Facing the Facts

Moderator: Umit Karabiyik, PhD

Co-Moderator: David Notowitz, BS

8:15 am—8:35 am	<b>C4</b>	<b>Facial Identification: Standardization, Certification, and Beyond</b> Steven Johnson, BS*; Richard Vorder Bruegge, PhD; Lora Sims
8:35 am—8:55 am	<b>C5</b>	<b>Emerging Paradigms in Forensic Facial Comparison Through Artificial Intelligence</b> Enrique Bermejo, PhD; M. Alejandra Guativonza, MA; Oscar Ibáñez, PhD*; Antonio D. Villegas, MSc; Alejandro Manzanares, MSc; Daniel García, BSc
8:55 am—9:15 am	<b>C6</b>	<b>WITHDRAWN</b>
9:15 am—9:35 am	<b>C7</b>	<b>Advanced Methods in Image Forgery Detection: Bridging Fundamentals and Emerging Technology</b> Chad Johnson, PhD*
9:35 am—9:55 am	<b>C8</b>	<b>Exploring the Impact of PDF Embedding on BMP and GIF Image Integrity and Authentication: The Initial Phase for Forensic Sciences</b> Gregory Wales, DSc*; Gregory Wales, MS
9:55 am—10:10 am		<b>BREAK</b>

### Sound Check

Moderator: Nicole Odom, MSFS

Co-Moderator: Lucky Onyekwelu-Udoka, PhD

10:10 am—10:30 am	<b>C9</b>	<b>The Sound of Deception: Voice and Language Markers in Emotionally Charged Lies</b> Sunčica Kuzmić, MASc*; Ivan Jerković, PhD; Andrea Ledić, MSc
10:30 am—10:50 am	<b>C10</b>	<b>Speaker-Specific Deepfake Detection in Conversational Audio Analysis</b> Lucky Onyekwelu-Udoka, MASc*; Yong Guan, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)
10:50 am—11:10 am	<b>C11</b>	<b>Navigating Moral Quandaries on the Front Lines: Lessons From 25 Years of Audio and Video Forensics With Attorneys and Experts</b> David Notowitz, BA*

# DIGITAL & MULTIMEDIA SCIENCES

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11:10 am—11:30 am	<b>C12</b>	<b>An AI-Based Speech Analysis Technology for Courtroom Media Transcripts</b> Joseph Remy, JD; Aakash Taneja, PhD; Zachary Lord, BS*; Melany Cruz, BS
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11:30 am—1:00 pm	<b>BREAK</b>
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## Fake It Until You Make It

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Moderator: Catalin Grigoras, PhD

Co-Moderator: Shuangteng Zhang, PhD

1:00 pm—1:20 pm	<b>C13</b>	<b>The Forensic-AI Fusion Toolbox: A Multi-Modal Framework for the Principled Detection of Advanced Deepfakes</b> Zeno Geradts, PhD* Stijn Van Lierop, MSc
1:20 pm—1:40 pm	<b>C14</b>	<b>A Holistic and Pragmatic Approach to Deepfake Forensics</b> Marco Fontani, PhD*; Blake Sawyer, BBA; Martino Jerian, MSc
1:40 pm—2:00 pm	<b>C15</b>	<b>Advances on Structure and Format Analysis for Media Forensics Authentication</b> Cole Whitecotton, MSc*; Catalin Grigoras, PhD*
2:00 pm—2:20 pm	<b>C16</b>	<b>Evaluating the Use of a Novel Expert System for Media Authentication Results Interpretation</b> Brandon Epstein, MS*; Bertram Lyons, MA*
2:20 pm—2:35 pm	<b>BREAK</b>	

## Frames, Clicks, and Clues

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Moderator: Joseph Remy, JD

Co-Moderator: Yansi Keim, PhD

2:35 pm—2:55 pm	<b>C17</b>	<b>A Quantitative Study of Frame Extraction Methods, Tools, and Their Impact on Extracted Frame Quality From High-Efficiency Video Coding Videos</b> Susan Kost, MSc*; Catalin Grigoras, PhD; Gregory Wales, DSc; Cole Whitecotton, MSc
2:55 pm—3:15 pm	<b>C18</b>	<b>Exploring Dropbox Image Downloads to iPhone Via Safari: File System vs. Camera Roll Validation Study</b> Gregory Wales, DSc*; Alexander Nash, MS*; Co-Author: Tierney Moe, BS
3:15 pm—3:35 pm	<b>C19</b>	<b>Uncovering User Behavior: AI-Based Timeline Reconstruction From Mobile Evidence</b> Chen Shi, MS*; Yong Guan, PhD
3:35 pm—3:55 pm	<b>C20</b>	<b>The Human Link in an Automated Era: Forensic Expertise in the Peritus Framework</b> Dineusa Amaral, MBA*; Cristiane Barbosa, MA*; Anna Beatriz Rodrigues Geranio

# DIGITAL & MULTIMEDIA SCIENCES

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## Friday

### Catch Me if You Can

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Moderator: Jason Lewis, PhD

Co-Moderator: Patrick Siewert, BS

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|-------------------|------------|--|
| 8:00 am – 8:20 am | <b>C21</b> | <b>Garmin Forensics: A Study on the Device's Data Integrity and Reliability in Court</b><br>Vinicius Lima, PhD*; Akif Ozer, MS; Umit Karabiyik, PhD  |
| 8:20 am—8:40 am   | <b>C22</b> | <b>iGEM: A Multi-Device Forensic Visualization Software for Geolocation and Digital Evidence Matching</b><br>Xiao Hu, MS*; Akif Ozer, MS*; Marcus Rogers, PhD; Umit Karabiyik, PhD*<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 8:40 am—9:00 am   | <b>C23</b> | <b>Comparing Smart Phone Geolocation Accuracy: Forensic Analysis of iOS and Android Location Artifacts</b><br>Jeff Rutherford, BSc*  |
| 9:00 am—9:20 am   | <b>C24</b> | <b>The Dark Side of Discounts: How Temu Handles Your Data</b><br>Sonali Tyagi, MS*; Umit Karabiyik, PhD*<br>(FSF Emerging Forensic Scientist Award Oral Presentation)  |
| 9:20 am—9:40 am   | <b>C25</b> | <b>Leave a Message—Where?: A Study of Apple's Voicemail Databases</b><br>Kaylee Schoepe, MS*; Chad Stedl, BS; Andrew Crouse, BA*; Brian Smith, BS  |
| 9:40 am—9:50 am   |            | <b>BREAK</b>   |

### Man Versus Machine

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Moderator: Xiao Hu, MS

Co-Moderator: Michael McGowan, BA

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|-------------------|------------|--|
| 9:50 am—10:10 am  | <b>C26</b> | <b>Forensic Analysis and Privacy Implications of LLM Mobile Apps: A Case Study of ChatGPT, Copilot, and Gemini</b><br>Sonali Tyagi, MS*; Yufeng Gong, MS*; Umit Karabiyik, PhD*<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 10:10 am—10:30 am | <b>C27</b> | <b>From Screen to Scene: An In-Depth Forensic Analysis on DeepSeek</b><br>Yufeng Gong, MS*; Sonali Tyagi, MS*; Vaishnavi Mahindra, MS*; Umit Karabiyik, PhD*<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                    |
| 10:30 am—10:50 am | <b>C28</b> | <b>Reading Between the Handles: How Bad Actors on Reddit and Darknet Discuss AI/LLM Misuse for CSEA</b><br>Sonali Tyagi, MS*; Kathryn Seigfried-Spellar, PhD*<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                   |
| 10:50 am—11:10 am | <b>C29</b> | <b>Bytes of Evidence: Examining Technology-Facilitated Abuse Against Women and Children</b><br>Neha Verma, PhD*  |
| 11:10 am—11:30 am | <b>C30</b> | <b>Improving CyberTipline Processing: Leveraging Machine Learning and OSINT for Enhanced ICAC Response</b><br>Nina Matulis, MS*; Marcus Rogers, PhD  |
| 11:30 am—1:00 pm  |            | <b>BREAK</b>   |

# DIGITAL & MULTIMEDIA SCIENCES

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## Show Me the Money

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Moderator: Sonali Tyagi, MS

Co-Moderator: Babangida Bappah

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| 1:00 pm—1:20 pm | <b>C31</b> | <b>Exploring the Use, Challenges, and Opportunities of Generative AI in Digital Forensics</b><br>Vir Phoha, PhD*   |
| 1:20 pm—1:40 pm | <b>C32</b> | <b>Can AI Explain Fraud? Explainable AI for Document Fraud Detection in Digital Forensics</b><br>Yujin Lee, BEng*; Umit Karabiyik, PhD; Marcus Rogers, PhD   |
| 1:40 pm—2:00 pm | <b>C33</b> | <b>Improving Learner Resilience to Online Fraud Through Immersive Roleplaying Experiences: A Transformative Learning Approach</b><br>Tatiana Ringenberg, PhD*; Paul Thomas, PhD; Alejandra Magana, PhD           |
| 2:00 pm—2:20 pm | <b>C34</b> | <b>Weighted Anomaly Detection and Cross-Chain Arbitrage Analysis: A Blockchain Forensics Framework</b><br>Xiao Hu, MS*; Umit Karabiyik, PhD*<br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 2:20 pm—2:35 pm |            | <b>BREAK</b>   |

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## Method to the Madness

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Moderator: Kyp Stavrou, BA

Co-Moderator: Tatiana Ringenberg, PhD

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|-----------------|------------|---|
| 2:35 pm—2:55 pm | <b>C35</b> | <b>Intent in Isolation: Forensics of Echo Chamber Activity</b><br>Vaishnavi Mahindra, MS*; Marcus Rogers, PhD   |
| 2:55 pm—3:15 pm | <b>C36</b> | <b>Scalpel3: A New High-Performance Carving Architecture for Recovering Fragmented Files</b><br>Golden Richard, PhD*; James Ghawaly, PhD; Karley Waguespack, MS |
| 3:15 pm—3:35 pm | <b>C37</b> | <b>A Research-Focused Framework for Empirical Method Validation in Digital and Multimedia Evidence</b><br>Gregory Wales, DSc*                                   |
| 3:35 pm—3:55 pm | <b>C38</b> | <b>Applied Gamification Research in Digital Forensics Higher Education for Knowledge and Skill Retention</b><br>Yansi Keim, PhD*; Marcus Rogers, PhD            |