35th Annual Digital Multimedia Evidence Training Symposium

LEVA INTERNATIONAL, INC.

**Indianapolis, Indiana
October 28 - November 1, 2024**

LEVA INTERNATIONAL, INC.

Jan Garvin,
Executive Director Emeritus
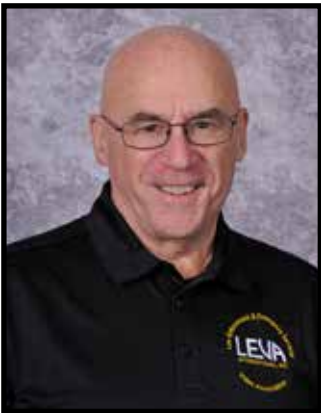
Jan Garvin joined LEVA in 1993. In 1997 he was asked to serve as LEVA's Training Vice President. A volunteer position which he accepted and served in until the end of 2014. Also during that period he was on the Board of Directors and served as Chairman.

In 1992, he was hired by the FBI and was assigned to the video production unit of the Training Division at the FBI Academy in Quantico, Virginia. It was during this time he became a LEVA member. Among the hundreds of projects he worked on were with the Bureau's Hostage Rescue Team, senior FBI leadership initiatives and a few "operational opportunities". Travels took him to places like Hungary, Germany, Thailand, Guam, Canada and all across the US. He retired as a supervisor after 22 years of honorable service.

Prior to the FBI, Jan served in the US Air Force from 1971 to 1991. Among his assignments were serving two tours in Southeast Asia, 2 years in Turkey and 3 years in Germany mostly in Armed Forces Radio and Television Service locations. He also served as a member of an Air Force air rescue unit and deployed numerous times on critical missions to document the events. During his enlistment he became a certified Emergency Medical Technician and is credited with saving two lives including a sheriff's deputy who suffered a cardiac arrest. His final tour of duty was with the Secretary of Defense's American Forces Information Service based in the Washington DC area. Jan served for 20 years on active duty and retired honorably.

It was in 2015 that he was hired to continue in the Training VP role. He helped established LEVA's presence internationally by arranging training in Canada, Tanzania, Hong Kong, Singapore, England and Sweden.

The VP position evolved into the Executive Director title. When LEVA needed someone to keep the website updated, he volunteered to take that on and did so for five years until his tenure as Executive Director ended in May 2024.

His record with LEVA includes organizing a total of 285 LEVA classes and 25 annual LEVA symposiums. Until 2024, he attended 30 consecutive LEVA symposiums.

LEVA acknowledges the many contributions of its recently retired Executive Director, Jan Garvin.

Over his 27 years of service, Jan oversaw LEVA's organizational growth and maintenance of excellent training quality in the field of Video Forensics.

We wish him nothing but the best in enjoyment of his well deserved retirement.

Thank you for joining us at the 35th LEVA Training Symposium!

LEVA INTERNATIONAL, INC.

WIN CRIMELINES

AMPED SOFTWARE

MEDEX FORENSICS
A Magnet Forensics Company

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iRecord

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Easy to build
Easy to use
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Registration: Sunday evening time TBD & 0700-0800 on Monday, October 28

	Classroom A	MONDAY, OCTOBER 28	Classroom B
0800 - 0830	Welcome		
0830 - 1000	Introduction to Photogrammetry for Video Analysts - Part 1		Prove It! The Future of Synthetic Media (AI) Detection in Justice and Public Safety
1030 - 1200	Intro to Moving Camera Tracking for Video Analysts - Part 2*		MedEx Product Updates
1200 - 1300	(ON YOUR OWN) LUNCH BREAK		
1300 - 1500	Finding Reliability in Video Timing Data		Mastering CrimeLines: Interactive Timeline Creation for Criminal Investigations*
1530 - 1700	AI for Image and Video Forensics: Mine of Information or Minefield?		
1900 - 2100	President's Reception (1900-2100)		

	Classroom A	TUESDAY, OCTOBER 29	Classroom B
0800 - 1000	Vehicle Speed Analysis - Positioning		Surveillance Video: From Acquisition to Presentation*
1030 - 1200	An Inside Look Into the Creative Visual Mind of a Learning Machine		
1200 - 1330	LUNCH BREAK @ VENDOR HALL		
1330 - 1500	Working with Inter-Camera Time Offsets to establish an accurate timeline in surveillance video		Adobe Premier Pro Forensic Media Techniques for Beginners*
1530 - 1700	No Scanner. No Problem.		
1730 - 1830	Annual Membership Meeting (1hr)		

	Classroom A	WEDNESDAY, OCTOBER 30	Classroom B
0800 - 1000	Vehicle Speed Analysis - Time Determination		It's not Your Grandmother's Input-Ace*#
1030 - 1200	A Concise Overview of H.265 / High Efficiency Video Coding		
1200 - 1300	(ON YOUR OWN) LUNCH BREAK		
1300 - 1400	Decoding Deepfakes: Impact & Challenges in Singapore		Synced or Not Synced - That is the Question: When Video and Audio Collide!*
1400 - 1700	The Amped Software Eco-System, an Overview		

	Classroom A	THURSDAY, OCTOBER 31	Classroom B
0800 - 1200	Advanced Techniques for Evidence Clarification and Emphasis in Adobe Premiere Pro*		Presenting Demonstrative Evidence in Court*
1200 - 1300	(ON YOUR OWN) LUNCH BREAK		
1300 - 1500	LEVA Level 1 Update		It's not Your Grandmother's Input-Ace*#
1500 - 1700	Getting the Whole Picture in Proprietary Video Evidence		

	Classroom A	FRIDAY, NOVEMBER 31	Classroom B
0800 - 1000	Case Studies in FVA, 3D Modeling & Animation, and Visual Storytelling		Deepfakes Demystified: Empowering Law Enforcement in the Digital Age
1030 - 1200	Voice Print: Fact or Fiction?		
1200	(ON YOUR OWN) LUNCH BREAK		
1300 - 1500	LEVA Level 2 Update		Deepfakes Demystified: Empowering Law Enforcement in the Digital Age
1530 - 1700	Using Adobe Animate for Court Presentations Dog and Pony		
1900 - 2100	Dinner Banquet		

* Workshop
\# The first 30 registrants will receive a trial license for use during the workshop

Presenter Bios

Al Zlogar, a LEVA Certified Forensic Video Technician (CFVT), is a Forensic Media Analyst, with 10+ years of experience with recorded audio and video signal flow, as well as forensic video enhancement, analysis, and authentication. Al brings significant expertise in vintage audio and digital media devices. Al supports the Medex team with the careful creation and analysis of exemplar files to populate the core Medex Reference Library and to produce new knowledge about the behavior of commercial media encoders and media pipelines.

Angela Ellis is a Media Forensic Specialist. She is with the Pinellas County Sheriff's Office where she provides complex geospatial visual investigations for the state and her agency's Investigative Operations Bureau using Premiere Pro. She also teaches LEVAs beginner and advanced course in Adobe Premiere Pro for Forensic Media. For the 17 years prior to her role in law enforcement, Angela has been a documentary film editor, a VFX editor, a national broadcast commercial editor and an editor and creative director for media content within science, medical and government industries.

Bart Wolczyk is a technical manager at Magnet Forensics. For the past six years, he has worked on implementing recovery software for the various makes and models of DVR recorders and more recently for cloud-based security systems. He has also worked on custom DVR cases including the recovery of deleted footage, and recovery of footage from damaged drives. Bart has 18 years of software engineering experience across several industries including digital forensics, data backup, e-commerce, and merchant services. He holds a BS in Computer Science from Southeast Missouri State University.

Brandon Epstein is the Chief Forensic Officer at Medex Forensics. A former law enforcement officer and digital forensic examiner, Brandon has extensive experience in a wide variety of investigations and prosecutions. Brandon holds a Master of Science degree in Recording Arts – Emphasis Media Forensics as well as numerous digital forensic certifications, including the LEVA CFVA certification. He is the chair of the Scientific Working Group on Digital Evidence and is a member of the IAI's Forensic Video Certification board, IACP Cybercrime and Digital Evidence committee, the NIST/OSAC Video/Imaging Technology and Analysis Subcommittee, and is a Fellow of the American Academy of Forensic Science. Brandon is also an adjunct professor in the New Jersey Institute of Technology's Forensic Science Program.

Brian J. Carney, Esq is a veteran Boston prosecutor (11 years) and the president of WIN Interactive, Inc., a Massachusetts based litigation consulting and multimedia technology firm. He has lectured on technology and the admissibility of demonstrative evidence to the American Bar Association, MCLE, the National District Attorney's Association, the National Association of Attorneys General, the National Homicide Investigators Conference, the National Cyber Crimes Conference, LEVA International Training Symposium, and numerous state prosecutor associations.

Brian J. Carney, Esq (cont.) He has consulted on several high-profile criminal prosecutions, including: Massachusetts v. Chism, Nebraska v. Garcia, New York v. Neulander, Texas v. Guy, and Connecticut v. Michael Skakel. Mr. Carney has designed hundreds of evidence visualizations and hundreds of three-dimensional animations for litigation. Mr. Carney has testified as an expert in forensic video analysis, 3D scene recreation, and cast-shadow analysis in courts in Massachusetts, Rhode Island, and New Hampshire. Mr. Carney has developed demonstrative evidence and technology training programs for prosecutors. Mr. Carney is the creator of CrimeLines and TimeLaw (interactive timeline software for trial lawyers).

Sergeant Christopher Andreacola has been a member of the Tucson police Department for thirty-seven years, 29 years as a first line supervisor. He became an instructor in Mobile Video Recording for Law Enforcement in the late 1990's, this was familiar ground as his major at the University of Arizona was General Fine Arts / Cinematography where he studied film, video and photography. He began performing forensic video analysis for the Department in 2013. He currently teaches around the country on Body Worn and In-car Cameras. He is a LEVA Certified Forensic Video Analyst and is a member of the Audio Engineering Society and teaches audio as part of LEVA Level 2.

Dean Brown, a detective with the Lawrence, KS PD's Special Victims Unit (SVU), began a law enforcement career at the Lawrence Police Department in 1996 as a patrol officer, and was promoted to detective in 2001 where he specialized in high technology crimes. Dean currently investigates cases involving digital evidence including mobile device forensics, computer forensics, and digital video examinations. Dean spent almost two decades assigned to the Heart of America Regional Computer Forensic Laboratory (HARCFL) examining computers and other digital evidence in a wide range of crimes using the FBI's Computer Analysis Response Team (CART) procedures and tools. During that time, Dean was an instructor for CART on Guidance Software's Encase forensic software. Dean is a LEVA Certified Forensic Video Technician and serves as an instructor for LEVA in the Level 1 and Level 2 classes.   Dean has a bachelor's degree in mathematical sciences with a computer science emphasis.

Emi Polito, is a LEVA Certified Forensic Video Analyst and an expert in CCTV recovery, enhancement and analysis. He has worked as a forensic video/audio analyst and CCTV technical lead for a number of Police forces and leading forensic providers in England. He has also provided testimony in court as an expert witness on a number of occasions in the southeastern region of the UK. Emi has over 25 years' experience in the field of media and imagery and his CV also includes a 10 years employment as a technical director and senior video editor and engineer for a major international broadcaster based in London. He is now a forensic expert and international trainer at Amped Software and continues to assist Police forces, the prosecution and criminal defense firms with the interpretation of video and audio evidence in court.

John Barahona is a retired detective with an incredible 27-year career in law enforcement. He has served in the United States Air Force Security Police and the Mesa Police Department and retired from the Arizona Department of Public Safety in 2023, where he dedicated over 7 years as the sole video and audio forensic detective in the Computer Forensics Unit. John excels in his field, holding a bachelor's degree (with honors) in Computer Information Systems with an emphasis in Computer Forensics from DeVry University. Additionally, he is certified as a LEVA Forensic Video Technician and a GIAC Certified Forensic Examiner. His expertise has led him to join the Amped Software team in 2023, where he eagerly provides training and technical support in North America.

Josh Guthrie is a 25-year veteran of the Pennsylvania State Police and retired in 2023. He served as a patrol officer, police instructor, critical incident reconstructionist, and digital multimedia specialist for his agency. For over 15 years, he reconstructed and assisted with hundreds of serious police incidents from collision scenes to officer involved shootings. During his time as an instructor, he trained thousands of law enforcement officers in collision reconstruction, scene analysis, video examinations, and police use of force policy and tactics. He also provided digital evidence analysis and demonstratives for numerous District Attorney offices throughout the state of Pennsylvania. He is currently an ACTAR accredited collision reconstructionist and a LEVA Certified Forensic Video Technician.

Y. Kelly Wu is a Ph.D. candidate in Computing and Information Sciences at Rochester Institute of Technology. Her research focuses on deepfake detection, human-computer interaction, and explainability. As part of the DeFake project at RIT, she works closely with journalists and analysts. Wu's work has been published at CHI, and she engages with the Scientific Working Group on Digital Evidence.

Koh Ling Xin is an experienced digital forensic practitioner and a Certified Forensic Video Technician under LEVA. Under the Digital and Information Forensics OPCON, she leads a team in Singapore's Technology Crime Forensic Branch.

Leona Ang is a Certified Forensic Audio engineer in the Home Team Science & Technology Agency, Digital & Information Forensics, Centre of Expertise. She works on the application of AI / Machine Learning to advance multimedia forensics capabilities in Home Team Departments (HTDs).

Mark Andrews has spent a significant portion of his career living and working in Chile. Mark is a LEVA-Certified Forensic Video Technician. For the past 18 years, he has worked with law enforcement educating thousands of officers, investigators, and legal professionals in the US, Canada, Latin America and Europe about using video as evidence and training them to use various video and image applications for investigations. In 2020, Mark began working as Training Manager for iNPUT-ACE, continuing in this role for Axon Investigate following iNPUT-ACE's acquisition by Axon Enterprise in 2021.

Mark Crouch is the Head of Investigations for FCIR in the UK. He holds a Doctorate in Professional Studies in the field of Collision Investigation (DProf) and has a Master's Degree in Applied Physics (MSci. Hons.) from the University of London. His work in the field of Collision Investigation has led to him achieving Chartered Physicist (CPhys) status from the Institute of Physics and also Chartered Forensic Practitioner (Collision). He is an Advanced Automotive Engineer (AAE), Licentiate of the City and Guilds Institute (LCGI), a Fellow of the Institute of Physics (FInstP), a Fellow of the Chartered Society of Forensic Sciences (FCSFS), a Fellow of the Institute of the Motor Industry (FIMI) and a Fellow of the Institute of the Highways Engineers (FIHE). He is a Member Institute of Traffic Accident Investigators (MITAI). Mark is also a Fully Vetted Expert for the UK Register of Expert Witnesses. Mark worked for the Metropolitan Police as a Forensic Collision Investigator for many years before forming FCIR. He has conducted investigations into hundreds of road traffic collisions, attending collision scenes, writing detailed reports, peer reviewing the work of others and researching new techniques within the field. He is the Coauthor of the book 'Video Analysis in Collision Reconstruction".

Martino Jerian is the CEO and Founder of Amped Software. He graduated in Electronic Engineering (summa cum laude) at the University of Trieste (Italy) with a thesis on forensic image processing and founded Amped Software in 2008. He has extensive software engineering experience designing and starting the development of Amped Software products. He taught as a contract professor in a few university courses related to investigations, forensics, and intelligence, has published several scientific papers related to image and video forensics, and has also worked as a forensic expert in major judiciary cases.

Melissa Kimbrell has been a member of the Amped Software team as a Trainer and Technical Support Specialist since May 2022. She teaches both online and in-person and is always available to help users understand a proper workflow to process their video evidence. Melissa is a Certified Forensic Video Examiner through the International Association for Identification (IAI), a Certified Forensic Video Technician through the Law Enforcement & Emergency Services Video Association (LEVA), and a member of the Video and Imaging Technology and Analysis Subcommittee of the Digital Multimedia Scientific Area Committee (OSAC).

Officer **Mike Holden** has been a member of the Tucson Police Department for thirteen years. He worked as a patrol officer, field training officer and lead police officer on Tucson's eastside for over nine years before taking over the body worn camera program. Shortly thereafter, he began training as a forensic video analyst and has been conducting video and audio forensic work since 2020. He is a current member of the Ontario Video Analyst Association, Law Enforcement and Emergency Services Video Association and is a Certified Forensic Video Technician.

M.T. Brown, is a detective with the Lawrence, Kansas Police Department (LKPD) and an instructor for the Law Enforcement and Emergency Services Video Association (LEVA). He began his career in 1991 as a patrol officer before moving to the Crimes Against Children unit in the Investigations Division. In 1994, M.T. was promoted to Detective, specializing in investigating violent crimes. In 2001, he completed his initial LEVA training and has since focused on video recovery, video analysis, and the use of video evidence in both violent and property crimes for the past twenty-three years. M.T. is highly involved in the law enforcement community, serving as an instructor and lab assistant for LEVA since 2008, training professionals domestically and internationally. He is a primary instructor for LEVA Level 1 and Level 2 and holds certifications as a LEVA-Certified Forensic Analyst and a Certified Video Forensic Examiner through the International Association for Identification (IAI). M.T. has been a member of the Scientific Working Group on Digital Evidence (SWGDE) video committee since 2015. Beyond crime investigation, M.T. has played a crucial role in securing resources for the Lawrence Police Department by writing and managing state and federal grants since 2003. He has secured over a million dollars in grant funding for specialized projects, technology-related equipment, and training. M.T. holds a Master of Science and a Bachelor of Arts in Criminal Justice, as well as a Bachelor of Science in Sociology.

Nishan Perera is a Senior Associate with the Collision Reconstruction team at 30 Forensic Engineering and a registered professional engineer in Ontario and British Columbia, holding a Bachelor of Applied Science degree in Mechanical Engineering with a focus on Automotive Engineering. He is also a Certified Forensic Video Technician (CFVT) through the Law Enforcement & Emergency Services Video Association (LEVA) and is specialized in the forensic video analysis of CCTV, cell phone, and dashboard camera footage. In addition, Nishan's aptitude extends into the application of photogrammetric techniques to extract measurements and locations of objects from photographs. He has been involved in conducting vehicle examinations and extracting 'Black Box' Data, as well as the investigation of over 500 collisions involving heavy trucks, automobiles, motorcycles, and pedestrians.

Paul Hartzell, Hennepin County. Paul has used Adobe Flash, then Animate to generate 100s of court presentations. The first case he did a Flash exhibit for was in 2006.

Saniat J. Sohrawardi is a PhD candidate at RIT, researching HCI aspects of deepfake detection and media forensics. As the lead researcher on the DeFake project, he collaborates across universities to study the usability of deepfake verification tools for journalists and analysts. Sohrawardi has designed user studies and developed interactive prototypes, deep learning models, and federated platforms for collaborative multimedia verification. With a multidisciplinary background in HCI, ML, web dev, and design, he brings a holistic perspective to the usability of AI tech. His work is published at prestigious venues like ACM CHI, SOUPS, CCS, C+J, IEEE IJCB, and JSTSP.

Stephen Cash is a Principal Consultant at FCIR, also a co-author of "Video Analysis in Collision Reconstruction". His work, and accompanying research and development in the field of Collision Investigation have led to him obtaining Incorporated Engineer (IEng) status from the Engineering Council and attaining Membership of the Institution of Mechanical Engineers (MIMechE). He is also a Member of the Institute of the Motor Industry (MIMI) with whom he is registered as an Advanced Automotive Engineer (AAE), and a Member of the Institute of Traffic Accident Investigators (MITAI). Stephen entered into the field of Collision Investigation as a Police Forensic Collision Investigator from an Engineering background. However, during the final 3 years of his Police career Stephen also practiced outside of the Police on a consultancy basis. Consequently, whilst a serving Police Officer, he would routinely be instructed in cases of Civil Litigation and Criminal Defense and give live evidence at trial.

Steve Gemperle was a Senior Special Agent with the United States Secret Service who specializes in cyber-crime. Steve joined the US Secret Service in 1999 and served with the US Secret Service until retiring in 2021. For the last decade of his career with the Secret Service he focused on computer crimes and served as Lab Director for the US Secret Service Southwest Regional Computer Forensic Lab. Steve has completed over 1900 forensic exams and 150 network intrusion investigations while working for the Secret Service and has been recognized as one of the US Secret Service's top network intrusion investigators. After retirement, Steve joined Magnet Forensics as a Forensic Consultant.

Session Descriptions

A Concise Overview of H.265 / High Efficiency Video Encoding. MedEx Forensics
This presentation will provide a concise overview of H.265, also known as High Efficiency Video Coding (HEVC). H.265 is a video compression standard designed to substantially improve coding efficiency compared to its predecessor, H.264/AVC.   This overview aims to provide attendees with a better understanding of H.265's capabilities and its potential impact on video evidence handling in law enforcement contexts.

Adobe Premier Pro Forensic Media Techniques for Beginners. Pinellas County Sherrif's Office.
This intensive 3-hour workshop is designed to introduce participants to the essential tools and techniques of Adobe Premiere Pro for forensic media. Participants will learn how to set up their workspace, import and manage evidence, perform basic video and audio analysis and processing, and export their results while maintaining evidence integrity.

Advanced Techniques for Evidence Clarification and Emphasis in Adobe Premiere Pro. Pinellas County Sherrif's Office.
This intensive 3-hour workshop focuses on techniques for evidence clarification and emphasis in Adobe Premiere Pro through application of advanced masking techniques, sophisticated highlighting methods and effective annotating callouts.

Surveillance Video – From Acquisition to Presentation. Magnet WITNESS Presentation. Magnet Forensics
Surveillance video is utilized in most investigations, but getting the most from the evidence you collect can be difficult. Depending on how it was collected, and what is required, you might be used to using multiple workflows or tools to acquire, process, and present the evidence. In this session, we'll demonstrate how you can use Magnet WITNESS to handle the entire workflow in a single tool. We will also discuss common considerations for your workflow needs and how small adjustments to your workflow can make a big difference in terms of efficiency.

Working with Inter-Camera Time Offsets to establish an accurate timeline in surveillance video captured by DVR, NVR, and Cloud camera systems. Magnet Forensics
Surveillance video systems often have inaccurate date and time settings. Many older DVR systems use a single onboard clock to timestamp video recordings from multiple channels. In contrast, cloud and NVR camera systems typically rely on each camera's own recorded time. This introduces the challenge of tracking time across different channels. In this presentation, we will explore the accuracy of time synchronization between channels in DVR, NVR, and cloud camera systems, as well as measure time drift in real-world scenarios. We will also assess the possibility of recreating timing offsets during actual incidents and the reliability of establishing an accurate incident timeline.

Prove It! The Future of Synthetic Media (AI) Detection in Justice and Public Safety. MedEx Forensics.
Tom Cruise performing magic tricks on TikTok, foreign leaders declaring acts of war...the prevalence of high-quality synthetic media online has brought a new age of disinformation and distrust to society. How does this relate to evidence admissibility in criminal investigations and legal proceedings? What is the true threat to public safety? This session will address the real concerns with synthetic media as it pertains to law enforcement and forensic examiners who have to authenticate evidence for court. Reliable, explainable, and repeatable techniques for the examination and authentication of video evidence will be introduced.

Mastering CrimeLines: Interactive Timeline Creation for Criminal Investigations. WIN Interactive, Inc.
Unlock the full potential of your criminal investigations with our comprehensive course on using CrimeLines software. Designed by a former prosecutor for crime lab technicians, forensic video analysts, law enforcement professionals, and prosecutors, this course teaches you how to create customized legal timelines that clearly and convincingly communicate critical case details. Forensic Video Analysts constantly strive to create timelines, especially of video events. However, it can be frustrating that tools like Photoshop and PowerPoint are not specifically designed for creating and presenting timelines. This is why we built CrimeLines software: it is specifically dedicated to building simple, easy-to-use, and powerful chronological presentations of digital evidence.

Case Studies in Forensic Video Analysis, 3D Modeling & Animation, and Visual Storytelling. WIN Interactive, Inc.
In this presentation, Brian Carney, Esq. will delve into three compelling case studies that highlight the critical role of video evidence in the pursuit of justice. This course is designed to provide forensic video analysts with valuable insights and practical lessons that can be applied to real-world scenarios. Through these case studies, participants will gain a deeper understanding of the methodologies and technologies that can make or break an investigation.

Synced or Not Synced - That is the Question: When Video and Audio collide! Tucson Police Department.
The course will begin with a short lecture on digital audio and its relationship with video files. After which students will work on four cases with issues relating to the syncing of audio and video files in an aggravated assault, and three officer involved shootings. The workshop will include synchronizing a gunshot (audio) from one DVR with a video recording from another DVR, determining the cause of missing audio (gunshot) from a video file, and determining the order of shots fired using speed of sound calculations. Students will need their own laptop with video and audio software. Recommended software to include, Audacity and/or Adobe Audition, Axon Investigate, and/or Amped FIVE as the instructor will use these.

No Scanner – No Problem! Revisiting old school vehicle speed estimates. Tucson Police Department.
3d scanning of crime scenes and collisions is all the rage. Some claim it is the only accurate method for performing a vehicle speed estimate from video footage. In a perfect world, we would all have the hardware and software to perform these types of analysis. But none of us live in that perfect world. Can the "old school" methods of vehicle speed estimation still be performed? Are they accurate? This case study involves a traffic fatality involving a vehicle which was estimated to be traveling almost 3 times the posted speed limit. We will discuss three analysis methods to include calibrated speed runs, straight-line photogrammetry, and reverse projection, which were all performed on this case and compare the results.

Voice Print Analysis: Fact or Fiction: Can people be identified through a recording of their voice? Tucson Police Dept.
As with many discoveries, In the 1940's Bell Laboratories was looking for ways to help the military identify individuals by their voice. In the 1960's this ideal moved to the criminal courts. It was accepted and used through the 1980's and into the 1990's and fell out of favor due to conflicting positions on its reliability. Well technology has clearly changed over the past 30 years. Has machine learning reached a place to reliably uniquely identify an individual by their voice as originally proposed in L.G. Krista's Voiceprint Identification article from Nature Journal on December 29, 1962? The course will review past research and demonstrate with real case examples two different speaker comparison software and evaluate their claims.

The Amped Software Ecosystem, An Overview. Amped Software.
Amped Software provides tools that can be used to resolve the issues of video examiners from the crime scene to the courtroom. Whether it be proprietary video conversion, quick viewing and correcting of video files, in-depth file analysis, enhancement, clarification, and restoration of video and still images, presentation, annotation, redaction, integrity and authentication verification, or forensic reporting, Amped Software has a solution for you. Come spend some time with the Amped Software team as we guide you through the progression of each of our tools and demonstrate how they can help satisfy the needs of your video investigation unit.

An inside look into the creative visual mind of a learning machine. Amped Software.
In this lecture, we will discuss the usage of Artificial Intelligence for the creation and processing of digital media evidence. Illegal activities associated to this new technology are a real burden for the criminal justice system. You will learn how deep fakes are created and understand the concepts beyond "text-to-image" stable diffusion. We will also discuss the delicate topic of image enlargement using trained neural networks. Above all, we will learn how to identify and fight the illegal usage of these new technologies.

Presenting Demonstrative Evidence in Court. Amped Software.
Join us for an exciting 4-hour hands-on class where you'll delve into real-world or simulated examples to create court-ready exhibits. Get ready to master the art of presenting video evidence using annotations, redactions, and compelling presentations with Amped FIVE, all while maintaining a solid and forensically sound workflow. To ensure everyone can participate, trial software and samples will be provided, so there's no need to have FIVE installed beforehand—just bring your computer. By the end of the session, you'll be creating illustrative and comparison exhibits, seamlessly combining video clips from different sources, and confidently redacting audio and video for public release. Gain valuable insights into Amped FIVE and enhance your skills for court or public domain presentations. Don't miss out on this invaluable opportunity to elevate your expertise!

Deepfakes Demystified: Empowering LE in the Digital Age. ESL Global Institute, Rochester Institute of Technology
In an era where digital deception is increasingly sophisticated, law enforcement faces new challenges in discerning truth from fabrication. Deepfakes, hyper-realistic AI-manipulated media, pose a significant threat, capable of manipulating public opinion, undermining evidence, and even fueling criminal activity. This essential workshop will equip you with the knowledge and skills to navigate this complex landscape. Through researcher-led presentations and hands-on exercises, you will gain a deep understanding of deepfake technology, its potential implications, and the cutting-edge forensic methods used to detect them. Learn to identify telltale signs of manipulation, utilize specialized software tools, and stay one step ahead of those who seek to exploit this technology."

Decoding Deepfakes: Impact & Challenges in Singapore. Singapore Home Team Science & Technology Agency
Deepfake technology has emerged as a significant challenge for law enforcement agencies and digital forensics experts worldwide. This presentation will delve into the impact and challenges posed by deepfake technology in Singapore and offer insights into the country's current efforts and future strategies in combating this growing threat.

It's not your grandmother's input, Ace. AXON Enterprise.
Axon Investigate is a robust workflow engine that offers a complete solution for video evidence processing, from the original source to the final report. It stands out with its impressive capabilities for reproducing most third-party videos, an easy-to-use interface, comprehensive features, and detailed reporting. Axon Investigate is the preferred video solution for new investigators and experienced video analysts. Integrated with Evidence.com, Axon Investigate enables users to download case evidence into the application for analysis and create compelling demonstrative exhibits, which can be easily uploaded back into Evidence.com as derivative evidence. For a chance to explore Axon Investigate's features, join this 3-hour hands-on workshop (please bring your own laptop). You will work through the latest updates and a case study on measuring exact distances from video using the overlay tool.

Vehicle Speed Analysis - Time Determination. FCIR.
Having established the displacement of a vehicle between two images, in order to calculate the average speed of the subject it is then necessary to establish the time interval between the same. This session will center on the manner in which video systems record, and techniques to assist the analyst in identifying not only the recording rate, but also the recording pattern if the recording rate is irregular.

Vehicle Speed Analysis - Positioning. FCIR.
In any speed analysis it is necessary to establish the displacement of a subject vehicle between two positions. This session will introduce a series of techniques to assist in positioning a vehicle as such – from those rooted in rudimentary photogrammetry through to those using 3D modeling processes. Whilst this session will predominantly center on vehicle speed analyses, these techniques can also be used to position any subject.

AI for Image and Video Forensics: Mine of Information or Minefield? AMPED Software.
In this session, we will discuss the potentials, challenges, and concerns related to the use of Artificial Intelligence (AI) while working on photo and video evidence. We will suggest some high-level guidelines for the potential use during investigations, and we will present a few applicative examples and related results, such as the enhancement of faces, the interpretation of low-quality license plates, and the detection of deepfakes. We will also discuss court cases and regulatory updates related to the use of AI on video evidence.

Getting the Whole Picture in Proprietary Video Evidence. AMPED Software.
In this session we will review how a standard video container stores data, then compare this to proprietary video samples. Through real world proprietary examples, we can see how important it is to correctly identify and extract the necessary video elements and all available frames in order to facilitate viewing the file completely and accurately.

Finding Reliability in Video Timing Data. AMPED Software.
The timing of a video might seem like something simple and straightforward, however there are lots of considerations that should be taken into account to prevent misinterpretation of the data. This lecture will identify many different sources of video timing data, factors that affect that data, and how to determine what can be relied upon for analyses like speed estimation or use of force.

Introduction to Photogrammetry for Video Analysts (Part 1). 30 Forensic Engineering.
Photogrammetry is the science of extracting measurements from photographs. As part of the regular function of a forensic video analyst, it may be required to determine aspects of a person/object or vehicle's speed, height or geometric characteristics, or back calculate positions of people/objects or vehicles as they were captured through video. This presentation will cover an overview of the history of photogrammetry, its application and utility for a forensic video analyst and the basic concepts and methods used. It will also introduce the possibility of a future course with more in depth training with regard to the software used for the purposes of photogrammetry.

Introduction to Moving Camera Tracking for Video Analysts (Part 2). 30 Forensic Engineering.
Following the lecture in photogrammetry, students will get a hands on introduction to SynthEyes; a program traditionally used in the visual effects industry. The hands on intro will allow students to gain an understanding of how camera tracking works, first hand, and how they may effectively use it in their case work when it comes to tracking moving cameras from body cams or dashcams.

Using Adobe Animate for Court Presentations Dog and Pony. Hennepin County Attorney.
In this class you will be shown how Adobe Animate can be leveraged as an alternative to PowerPoint for presenting high resolution images, any type of video, synchronized playback, animated 911 calls, and more. Many agencies already have the Adobe Creative Suite but Animate is elusive. You will be shown how you can create an executable file that can be opened on any PC or MAC with no additional software or license. This is not a class on how to program Animate but to highlight the strength of Animate and show just a few potential uses. Animate requires the use of ActionScript 3 (AS3) but it can be programmed without learning how to write code. The versatility of Flash/Animate continues. There are many courtroom tools on the market. Most require a license and cost up front as well as training for each user. Animate has the advantage of a single license that you can already be paying for.

The Law Enforcement & Emergency Services Video Association is a 501(c)(3) non-profit corporation providing globally recognized training and certification in the science of forensic video analysis. Chartered in 1989, LEVA serves as a key resource providing professional development through quality training and informational exchange.

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