



Ian Miller

MEng PE

Senior Engineer

contact

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📞 949.855.4632

📍 Los Angeles

expertise

Collision Reconstruction

Video Analysis

Ian Miller works in MEA's Collision Reconstruction and Video Analysis groups in our Los Angeles office. To investigate crashes involving cars, trucks, buses, motorcycles, bicycles, and pedestrians, he routinely uses advanced systems, including manufacturer-specific diagnostic software, to recover event data from vehicles. Known for his ability to identify and extract digital evidence from an increasing number of sources inside and outside of modern vehicles, he combines electronic evidence with traditional engineering analysis to reconstruct crash events with greater accuracy. A LEVA Certified Forensic Video Technician, he can also determine the locations, orientations, movements and speeds of objects recorded on video using 3D graphics software and laser scans of scenes and vehicles.

Ian is registered as a professional engineer and holds a Master's Degree in Mechanical Engineering from the University of California, Berkeley. There, he helped develop a portable wave-powered desalination device to produce drinking water. Ian finds his design experience is an asset in his forensic work. "The time I spent studying design taught me the skills I need to succeed in the forensic world: a habit of questioning everything, and of using validated scientific methods to find answers."

In 2023, Ian began studying the performance of anti-lock braking systems (ABS) on different road surfaces, conducting more than 400 braking tests that updated and effectively doubled the size of the pre-existing data set. "Understanding how quickly a vehicle can stop is important, as it factors into our calculations of impact speeds and avoidance scenarios," he highlights.

Building on this work, Ian continues to conduct research and help expand the body of knowledge available to collision reconstruction professionals. He has investigated vehicle braking performance under different roadway and vehicle conditions, has helped quantify the uncertainty in video-based measurements and bicycle-computer GPS data, and remains actively involved in the firm's ongoing scientific studies. "Anytime we can move from using a hypothetical or an estimated value to using a value based on real-life data in our calculations, it removes uncertainty and adds precision. Thanks to our research, we can provide our clients with more answers they can rely on."



education

Master of Engineering, Mechanical Engineering, University of California – Berkeley, 2021.

Bachelor of Science, Mechanical Engineering, Northeastern University, 2019.

professional status

Certified Forensic Video Technician, Law Enforcement & Emergency Services Video Association, July 2024.

Registered Professional Engineer, State of California, January 2024. License number 42003.

professional associations

Member, Law Enforcement & Emergency Services Video Association, June 2023.

California Association of Accident Reconstruction Specialists (CAARS), since 2023.

Society of Automotive Engineers (SAE), since 2021.

professional experience

MEA Forensic Engineers & Scientists

Project Engineer, July 2021 to present

Assists with technical investigations involving motor vehicle accident reconstruction. Attends site and vehicle inspections, participates in analysis including severity assessment, collision sequence, occupant kinematics, vehicle speed, vehicle dynamics, and accident avoidance potential.

Engineers Without Borders

Member of the Northeastern University Chapter, September 2015 to May 2019

Write extensive technical reports on a proposed water distribution system for a community of 300 people in Panama. Tasks include CAD diagraming, technical writing, background research, and workflow management of a team of 40 members.

Pro-Dex Inc

Product Design Engineer, Co-op, July to December 2018

Design and improve new product prototypes based on feedback from surgeons and medical researchers. Write and conduct design protocols to ensure compliance. Create production components for fast-paced manufacturing.

Sikubora Limited

Solar Energy Engineer, Co-op, July to December 2017

Collaborate on the design and installation plans for over 100 household systems. Organize partial product recall and conduct root cause analysis of the malfunctioning circuit board component of a solar energy system, and present findings to CEO. Make recommendations leading to hiring and sourcing decisions.

publications

Vehicle Deceleration Levels during Wet-to-Dry Transitions on an Asphalt Surface with a High Proportion of Aggregate

The Effect of Tire Tread Depth on Antilock-Brake System (ABS) Decelerations on Dry and Wet Asphalt and Concrete Road

Surfaces

Decelerations for Vehicles with Anti-Lock Brake Systems (ABS) during Wet-to-Dry Transitions on Asphalt and Concrete Road Surfaces

Uncertainty Introduced by Image Projection in Video-Based Reconstructions of Vehicle Positions and Speeds

Quantifying Uncertainty in Bicycle-Computer Position Measurements

Decelerations for Vehicles with Anti-lock Brake Systems (ABS) on Dry Asphalt and Concrete Road Surfaces

lectures & presentations

March 1, 2023 – Decelerations for vehicles with anti-lock brake systems (ABS) on dry asphalt and concrete road surfaces, 2023 SAE Accident Reconstruction Digital Summit, Online.

training and professional development

July 8-12, 2024 – LEVA Level 2: Digital Multimedia Evidence Processing, Law Enforcement & Emergency Services Video Association, Pontiac, MI.

February 5-7, 2024 – EDR User's Summit, Collision Publishing, Houston, TX.

September 18-21, 2023 – Motorcycle Collision Reconstruction, Lightpoint Scientific, Online.

June 27-28, 2023 – CloudCompare Training, ai2-3D Forensics, Eugene Liscio, Online.

June 5-9, 2023 – LEVA Level 1: Forensic Video Analysis & The Law, Law Enforcement & Emergency Services Video Association, New Haven, CT.

May 25, 2023 – Crash Data Retrieval Technician Update Course, Kent E. Boots & Associates, MEA.

February 23-24, 2023 – PC-Crash live training: Expert Skills Workshop, Rancho Santa Margarita, CA.

August 2022 – Event Data Recorder Use in Traffic Crash Reconstruction Level 1, Institute of Police Technology and Management, Online.

February 28 – 29, March 1, 7-8, 2022 – Photomodeler for Collision Investigation, Photomodeler Technologies, Online.

February 2022 – Photogrammetry: Forensic Applications Using Photomodeler, DCM Technical Services, virtual

February 23, 2022 – Rail Safety Training Course, Los Angeles County Metropolitan Transportation Authority, Los Angeles, CA.

November 8-12, 2021 – EDC Reconstruction Course, Engineering Dynamics Company, Online.

October 18-22, 2021 – Advanced Troubleshooting and Vehicle Systems for the CDR/EDR Operator-Technician, Kent E Boots & Associates, Temecula, CA.

August 30 and September 1, 2021 – Photography for Accident Reconstruction, Product Liability and Testing, Society of Automotive Engineers (SAE), Oxnard, CA.

August 20-25, 2021 – Bosch CDR Tool Technician Training, Institute of Police Technology and Management, Online.