

ALYSSA VISALLI, BSBE, CXLT, ACTAR

Managing Forensic Expert

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EDUCATION

Bachelor of Science (BS) in Biomedical Engineering with a Minor in Humanitarian Engineering & Computing, Miami University, Ohio – 2018

Related Courses & Labs:

- Bio-Mechanics, Human Physiology, Statics/Dynamics & Mechanics of Materials, Biomedical Engineering, Differential Equations for Engineers, Bio-Materials, Applied Statistics, Physics I & II, Material and Energy Balances, Engineering Design I & II, Computer-Aided Experimentation

MEMBERSHIPS AND LICENSES

- Biomedical Engineering Society (BMES)
- Society of Automotive Engineers (SAE) #6152816829
- National Association of Professional Accident Reconstruction Specialists (NAPARS) #56317629
- Southwestern Association of Technical Accident Investigators (SATAI) #54271220
- California Association of Accident Reconstruction Specialists (CA2RS) #54146769
- EIT License provided by the California Board for Professional Engineering, Land Surveyors, and Geologists #174628
- CXLT Certification (Excel Tribometers)
- American Society of Testing and Materials (ASTM) F-13 Committee: Pedestrian/Walkway Safety and Footwear
- Accident Reconstruction Certification through Society of Automotive Engineers (SAE)
- Accreditation Commission for Traffic Accident Reconstruction (ACTAR) Certification #4261

WORK EXPERIENCE

Managing Forensic Expert – Biomechanics & Accident Reconstruction, Aperture LLC Irvine, (August 2025 to present)

- Continued practice of duties described below under the Forensic Expert title with addition of internal management responsibilities

Forensic Expert – Biomechanics & Accident Reconstruction, Aperture LLC Carlsbad, (March 2020 to August 2025)

- Perform analysis to determine the biomechanical potential of injury from events including motor vehicle collisions, workplace-related incidences, slip/trip and falls, and more
- Analyze data specific to the human body's kinematic and kinetic responses/limitations to varying loading modes to delineate the causal relationship between event and the biomechanical potential for injury
- Conduct on-site inspections of both vehicles and locations using Unmanned Aircraft Systems (UAS) and laser scanners to generate point cloud models to assist in analysis
- Apply engineering principles to human factors as it relates to biomechanics and accident reconstruction to driver/pedestrian perception/reaction time, human response and behavior to specific environmental stimuli, visibility, attention, and perception

Technical Writer, Nordson-Asymtek (June 2019 to March 2020)

- Documented technical procedures, used to assemble complex automotive machinery, in a concise and clear manner that ensures consistent end-results with easy repeatability
- Collaborated with New Product Integration Engineers and Production Associates to further edit and improve existing documentation to eliminate chance for human error
- Utilized LEAN manufacturing principles as the foundation to improve assembly procedures so that machines are produced as efficiently as possible

Lab Technician – Medical Device, BIT Group (January 2019 to June 2019)

- Tested software for automated chemiluminescent testing on in vitro diagnostic medical devices to validate the quality and functionality of the instrument's hardware
- Diagnosed automation errors occurred during tests including mechanical, electrical, chemical, and/or programming failures
- Maintained detailed record-keeping on the instrument while collecting and analyzing data

Engineering Inspector Intern, Consulting Services Inc. (July 2018 to October 2018)

- Perform uniaxial compressive loading on concrete samples using a universal testing machine
- Operate a Troxler nuclear density gauge to inspect compaction and moisture levels
- Verified that contractors adhered to the state mandated guidelines
- Inspect and observe construction build sites

Pharmacy Technician, The Kroger Co. (August 2017 to December 2018)

- Assisted licensed pharmacists in preparing and dispensing prescription medications accurately and efficiently
- Maintained accurate patient records and ensured compliance with HIPAA regulations.
- Maintained cleanliness and organization of the pharmacy area in accordance with safety and health regulations
- Operated under company best practices and procedures for safe work environment regarding retail storefronts

Pro-Shop/Skate-Shop Associate, Goggin Ice Center – Miami University (August 2014 to March 2017)

- Maintained cleanliness and organization of the skate rental area, pro shop, and workshop.
- Educated patrons on rink rules and safety protocols to promote a secure and enjoyable skating environment.
- Performed skate sharpening, equipment maintenance, and minor repairs on hockey and figure skates.

PUBLICATIONS

Farhat, A., Sattar, A., Visalli, A., Jones, B., “The Accuracy of 3D Mesh Generation of Neuralangelo Versus Photogrammetry and LiDAR Technology,” IEEE Access, May 2025.

Kazmierczak, A., Umale, S., Visalli, A., Webb, E. et al., "Aggregation of Cervical Loads in Rear Impact Crash Tests and Comparison to Activities of Daily Living," SAE Technical Paper 2025-01- 8708, March 2025.

RESEARCH AND TESTING EXPERIENCE

California Association of Accident Reconstruction Specialists Conference 2022 (CA2RS):

- Participant in approximately seven live instrumented human volunteer crash tests low speed minor crashes (frontal, rear-end, and lateral impacts)

World Reconstruction Exposition 2023 (WREX):

- Pedestrian Crash Testing Track Volunteer, Standing Pedestrian, Pedestrian on Bicycle, Pedestrian on Scooter, recorded approximately 20 crash tests

Southwestern Association of Technical Accident Investigators 2024 (SATAI):

- Volunteered as a human subject in a series of 4 low speed rear-end impacts between an instrumented bullet Toyota Corolla and target Kia Rio. With a Hybrid III 50th percentile male ATD in the bullet Corolla, instrumented humans and BioRID II ATD in the target Rio. Official SATAI tests were four high-speed motorcycle-to-sedan impacts utilizing instrumented vehicles, and ATDs, which included: a broadside impact between a Suzuki GSX-R750 and a moving Honda Civic target, a broadside impact between a Yamaha YZF-R1 and a moving Honda Civic target, a broadside impact between a Kawasaki Versys 650 and a moving Honda Civic target, and an angled frontal impact between a Kawasaki Versys 650 and a stationary Honda Civic target. Vehicle dynamics, vehicle damage, EDR data, and dummy occupants motions/loading were documented and analyzed. (Results presented at SATAI Conference, January 3-6, 2024, Glendale, AZ)

PRESENTATIONS

Southwestern Association of Technical Accident Investigators 2024 (SATAI):

- Analyzed and presented crash test data for both live volunteer and ATD crash test for low- speed minor rear end and frontal collisions

CONTINUING EDUCATION

- Slips, Trips, and Falls International Conference (STF 2026): The International Ergonomics Association, June 2026
- American Society of Testing and Materials (ASTM): F-13 Pedestrian/Walkway Safety and Footwear Committee Meeting, February 2026
- Society of Automotive Engineers (SAE): Vehicle Crash Reconstruction: Principles and Technology, October 2025
- Society of Automotive Engineers (SAE): The Fundamentals of Automotive All-Wheel Drive System, September 2025
- Society of Automotive Engineers (SAE): Driver Distraction from Electronic Devices: Insights and Implications, September 2025
- California Association of Accident Reconstruction Specialists (CA2RS): Update on current motor vehicle safety systems and technology implemented in modern vehicles – airbags, safety restraint systems, pretensioners, sensors, control modules, upcoming technology, July 2025
- American Society of Testing and Materials (ASTM): F-13 Pedestrian/Walkway Safety and Footwear Committee Meeting, January 2025
- American Society of Testing and Materials (ASTM): F-13 Pedestrian/Walkway Safety and Footwear Committee Meeting, June 2024
- Society of Automotive Engineers (SAE): Applied Vehicle Dynamics – Tire-road friction limits, fundamental braking response attributes, analyze basic anti-lock brake system (ABS) operation, calculate most efficient path for a vehicle to negotiate a given test maneuver, discuss the effectiveness and limitations of electronic stability control systems (ESC), March 2024
- Southwestern Association of Technical Accident Investigators (SATAI) Conference/Crash Testing: 3D Technologies for Crash Scene Documentation, Motorcycle Reconstruction Overview, Digital Forensics, The Biomechanics of Motorcycle Helmets, Crash-test Review, Crash Team Volunteer, Crash Test Occupant, January 2024
- American Society of Testing and Materials (ASTM): F-13 Pedestrian/Walkway Safety and Footwear Committee Meeting, January 2024
- Diversified Technical Systems (DTS): Principles of Data Acquisition – hardware, software, and theory behind data acquisition, October 2023
- Society of Automotive Engineers (SAE): Injuries, Anatomy, Biomechanics & Federal Regulation (Online), June 2023
- California Association of Accident Reconstruction Specialists (CA2RS): Seatbelts, Pre- Tensioners, and Airbags – How they work and their effect on occupant safety – Southern California, June 2023
- World Reconstruction Exposition 2023 (WREX): Educational Forum for Accident Investigation Professionals – Live Crash Testing, Pedestrian Crash Test Volunteer,
- Nighttime Recognition and Visibility, EDR Update for Passenger Vehicles, Sideswipe Collision Dynamics, Injury Biomechanics for Accident Reconstruction, New GM EDRs, Photomodeler – Accurate Measurements by Combining Images or Video to Control, Dashboard Cameras and Human Vision, Video in Reconstruction, Accident Reconstruction and ADAS, Time Distance Analysis in Collision Reconstruction, April 2023
- Society of Automotive Engineers (SAE): Accident Reconstruction Digital Summit 2023 – Quantifying Deceleration of Various Electric Vehicles, Data Recording in Modern Traffic Signals, Head injury Risk During

Accidents Involving New Personal Mobility Devices, Evaluation of Tesla Dashcam Video System for Speed Determination via Reverse Projection Photogrammetry, Video Analysis in Traffic Accident Reconstruction, Legal Issues in Accident Reconstruction, March 2023

- California Association of Accident Reconstruction Specialists (CA2RS): Accident Reconstruction and Biomechanics – Scene diagrams, documenting and analyzing evidence, court preparation, participant in live human volunteer crash testing, photogrammetry analysis, October 2022
- Excel Tribometers Program (CXLT): Safety Science Protocol - Human Slip and Fall Injury Events, Human Factors, Kinesiology, Gait Dynamics, Physics, Chemistry, Tribology, September 2022
- Crash Safety Solutions (CSS) Interactive Driver Response Research (IDRR) Forum 2022 – Human Factors Applications, Driver Response Times, Cut-Offs/Merging, Headlight Analysis, Night-Time Recognition, Path-Intrusions, Response to Lead Vehicles, Acceleration Research Review, Recognition Distances, San Diego, California, March 2022
- California Association of Accident Reconstruction Specialists (CA2RS): Crash Investigation, Perception/Response, Roadway Evidence, Proper Documentation Methodology, Mapping and Measuring, Collision Photography, Vehicle Documentation, Measuring Protocols, Vehicle Behavior (Documentation/PDOF/Rotation), Conservation of Momentum, Energy Principles, Cellular Carrier Data Forensic Analysis, Lake Tahoe, California, October 2021
- California Association of Accident Reconstruction Specialist (CA2RS): Photogrammetry, Analysis of a Single photo: A Novel Approach to Determine Vehicle Speed, Final Rest, and Ultimately Causation, July 2021
- LightPoint Scientific & Collision & Crime Forensic Solutions (CFS): Using Exemplar Vehicle Point Clouds for Improved Collision Investigation and Reconstruction, Leica RTC360 Laser Scanner, June 2021
- California Association of Accident Reconstruction Specialist (CA2RS): Night Collision Scene Reconstruction Using UAS, Challenges Mapping at Night, Equipment, Resultant Mapping, May 2021
- Society of Automotive Engineers (SAE): Accessing and Interpreting Heavy Vehicle Event Data Recorders, Identify the Potential Sources of HVEDR Data Available on Commercial Vehicles, Utilize Various Methodologies for Accessing and Imaging Data from HVEDRs, Properly Interpret Data from HVEDRs and Understand the Limitations of this Data, Analyze HVEDR Data in the Context of Collision Reconstruction, Oxnard, California, May 2021
- California Association of Accident Reconstruction Specialist (CA2RS): Drone - New Regulations and Best Ways to get Licensed, 3D Scan Software in Alpha Stage used for Scene Modeling, Regulations for this Coming Year, New Drone Laws, April 2021
- California Association of Accident Reconstruction Specialist (CA2RS): 3D Scene Visualization and Courtroom Presentation, 3D Scene Documentation Methods, Creating 3d Environment, Animating People and Vehicles in that Environment, Telling the Story in Court, February 2021
- California Association of Accident Reconstruction Specialist (CA2RS): An Overview of Collision Reconstruction and Investigation using Crash data Retrieval Event Data, Understanding Autonomous Levels and Advanced Driver-Assist Systems, Data Challenges, Future of Crash Data (Online), December 2020
- California Association of Accident Reconstruction Specialist (CA2RS): How Drivers Respond in Real World Crash & Near Crash Scenarios. Understanding Driver Response Time in Correlation with Time Until Contact, Driver Perception-Reaction Timing Methodology, Review of Statistical Significance, Review of External Factors & Secondary Tasks – Unimodal/Multimodal, Comparison of Data with Prior Research (Online), November 2020

- Texas Association of Accident Reconstruction Specialists (TAARS): Nighttime Accidents- Applied Human Factors Concepts for Accident Reconstruction. Light Measurement Definitions, Methods for Digital Video Camera Calibration for Luminance Estimation, Time of Day and the Effect on Illumination and Color, Retroreflective Material and Reflection Performance (Online), October 2020
- National Association of Professional Accident Reconstruction Specialists (NAPARS): Analysis of ECM Data in New Freightliners. Understanding the Data Available from New Freightliner ECM, Amount of Data Recorded Before an Accident, Trigger Thresholds, Power Requirements, Understanding the Abilities and Anomalies likely Based on Make and Model (Online), October 2020
- National Association of Professional Accident Reconstruction Specialists (NAPARS): Considering Tires in your Investigation. Causes of Tire Failure, Understanding Structural Patterns as Evidence of Failure Type, Pressure Loss Over Time (Online), October 2020
- National Association of Professional Accident Reconstruction Specialists (NAPARS): Obtaining Chip-level Data from Modules. Chip Data Terminology, Chip Vulnerabilities and How to Address Them, Types of Damage and Methods of Data Recovery. (Online), October 2020
- National Association of Professional Accident Reconstruction Specialists (NAPARS): Perception Response Times For Various Crash Types. Using Accepted Methods to Evaluate a Driver's Response Time, Elements Necessary for Calculating "Avoidance", Typical PRT's Crash Types and the Underlying Science (Online), October 2020
- FARO Technologies: Utilizing 3D Technology in the Courtroom – 3D Scans Used to Enhance Presentation in Courtrooms, Understanding the Court Requirement for Using 3D Data in Trial, Review Best Practices to Educate and Engage the Trier of Fact, Prepare a Witness or Investigator to Testify Utilizing 3D Data (Online), September 2020
- FARO Technologies: Public Safety & Forensics 3D Scanning Best Practices – Efficient use of the Laser Scanner, Techniques/Methods for Evidence Capture, Process of Documenting Blood Spatter and Bullet Trajectories. (Online), September 2020
- University of Colorado System, EMT Foundations: History and Components of the EMS System, Basic Medical Terminology, Basic Human Anatomy, Master Personal and Scene Safety (Online), September 2020
- Institute of Police Technology and Management (IPTM): Event Data Recorder Use in Traffic Crash Reconstruction – Level 1, Analyze Data Obtained from EDR, Understand Delta-V, Use of Delta-V, Use Pre-Crash Data (Online), August 2020
- Rimkus Consulting Group Inc.: Using Animations and Graphics in Biomechanical Analysis, Current Types of Animations and Graphics, How Animations are Used to Present Key Points in Biomechanical Analysis and Accident Reconstruction (Online), August 2020
- Rimkus Consulting Group: Biomechanics of Slip and Fall – Types of Injuries That Occur as a Result of Differing Fall Directions, Surface Friction and Medical Conditions that Contribute to Falls (Online), June 2020
- Institute of Police Technology and Management (IPTM): Fundamental Techniques of Crash Investigation – Case Preparation and Courtroom Presentation, Roadway Evidence, Safety Belt Examination, Tire-Examination, Vehicle Lamp Examination in Traffic Collisions (Online), March 2020
- Institute of Police Technology and Management (IPTM): Investigation of Pedestrian Collisions – Types of Pedestrian Strikes, Evidence from the Vehicle, Evidence from the Roadway, Speed Determination, Basic Reconstruction (Video on Demand), March 2020

- Institute of Police Technology and Management (IPTM): Crash Data Retrieval Tool Technician Training – Understanding the Relevant History of EDR, Use of Bosch CDR Tool, Prevent Spoliation of EDR data (Online), March 2020
- Institute of Police Technology and Management (IPTM): UAVs in Crash Reconstruction – Traffic Incident Management, Measurement Techniques and Instruments, Unmanned Aircraft Systems (Online), March 2020